# Vertical Condensing Unit

Models: MVCU 025 A/AR MVCU 040 A/AR
MVCU 030 A/AR MVCU 050 A/AR
MVCU 035 A/AR MVCU 060 A/AR


McQuay® Air Conditioning

# Contents



**Note :** Installation and maintenance are to be performed only by qualified personnel who are familiar with local codes and regulations, and experienced with this type of equipment.

**Caution:** Sharp edges and coil surfaces are a potential injury hazard. Avoid contact with them.

**Warning** : Moving machinery and electrical power hazard. May cause severe personal injury or death. Disconnect and lock off power before servicing equipment.

# Features

## Space Saving
The smaller base size and vertical air discharge allow compact location on multi-unit installation.

## Power Source
Single phase unit is available in MVCU025A. Three phase units are available in MVCU030A, 035A, 040A, 050A & 060A.

## Wide Range
MVCU units are available in 2.5 to 6 HP to meet various needs in residential and light commercial applications.

## Vertical Air Discharge
Better air distribution through vertical hot air discharge which helps to increase the efficiency of heat exchange.

## Quiet Operation
Direct drive condenser fan carries away the normal operating noise through vertical air discharge; well isolated compressor legs also avoid transmission of vibration to the housing cabinet, which keeps a low operating sound to MVCU.

## Safety
High & low pressure switch are installed as a safeguard to protect the system.

Rigid coil guard to protect the coil from damage.

## Wide Choices Of Indoor Units
It can be coupled with :
- Wall mounted split unit
- Ceiling cassette split unit
- Ceiling convertible split unit
- Ceiling concealed split unit

# Specifications

## WALL MOUNTED – VERTICAL CONDENSING UNIT (COOLING ONLY)

| | | | | | | |
|---|---|---|---|---|---|---|
| **MODEL** | | | **INDOOR UNIT** | | MWM 025F | MWM 031F |
| | | | **OUTDOOR UNIT** | | MVCU 025A | MVCU 030A |
| **NOMINAL** | | | | **kcal/h** | 5922 | 7560 |
| **COOLING** | | | | **W** | 6887 | 8792 |
| **CAPACITY** | | | | **Btu/h** | 23500 | 30000 |
| **NOMINAL TOTAL POWER** | | | | **W** | 2430 | 2880 |
| **NOMINAL TOTAL CURRENT** | | | | **A** | 12.4 | 5.1 |
| **INDOOR UNIT** | **POWER SOURCE** | | | **V/Ph/Hz** | 220-240 / 1 / 50 | |
| | **REFRIGERANT / CONTROL** | | | | R22 / OUTDOOR CAP.TUBE | |
| | **FAN** | **FAN TYPE** | | | ANTI FUNGUS CROSS FLOW FAN | |
| | | **AIR FLOW** | | **cfm / L/s** | 580 / 274 | 740 / 349 |
| | | **FAN MOTOR** | | | 4 POLES x 25W | 4 POLES x 45W |
| | | **RATED INPUT POWER** | | **W** | 57 | 71 |
| | | **RATED RUNNING CURRENT** | | **A** | 0.24 | 0.30 |
| | | **FAN MOTOR PROTECTION** | | | THERMAL OVERLOAD RELAY | |
| | **COIL** | **TUBE** | **MATERIAL** | | SEAMLESS COPPER TUBE | |
| | | | **TUBE PATTERN** | | INNER GROOVED | |
| | | | **DIAMETER** | **mm/in** | 7.0 / 0.276 | 9.52 / 0.375 |
| | | | **THICKNESS** | **mm/in** | 0.32 / 0.013 | 0.35 / 0.013 |
| | | **FIN** | **MATERIAL** | | ALUMINIUM (HYDROPHILIC SLIT FIN) | |
| | | | **THICKNESS** | **mm/in** | 0.11 / 0.0043 | |
| | | | **ROW** | | 2 | 2 |
| | | | **FIN PER INCH** | | 18 | 16 |
| | | **FACE AREA** | | **$m^2/ft^2$** | 0.254 / 2.733 | 0.291 / 3.130 |
| | **DIMENSION** | | **HEIGHT** | **mm/in** | 306 / 12.0 | 360 / 14.2 |
| | | | **WIDTH** | **mm/in** | 1062 / 41.8 | 1200 / 47.2 |
| | | | **DEPTH** | **mm/in** | 202 / 8.0 | 200 / 7.9 |
| | **WEIGHT** | | | **kg** | 16 | 17 |
| | **SOUND PRESSURE LEVEL - H / M / L** | | | **dBA** | 47 / 44 / 42 | 49 / 47 / 45 |
| | **CONTROL** | | **ROOM TEMPERATURE** | | THERMOSTAT ELECTRONIC CONTROL | |
| | | | **AIR DISCHARGE** | | AUTO LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT) | |
| | | | **OPERATION** | | LCD REMOTE CONTROL | |
| | **CONDENSATE DRAIN SIZE** | | | **mm/in** | 20 / 0.79 | |
| | **AIR FILTER** | | | | SARANET+IONIZER+DEODORIZER | |
| | **PACKING DIMENSION** | | **HEIGHT** | **mm/in** | 382 / 15.0 | 420 / 16.5 |
| | | | **WIDTH** | **mm/in** | 1130 / 44.5 | 1267 / 49.9 |
| | | | **DEPTH** | **mm/in** | 268 / 10.6 | 260 / 10.2 |
| **OUTDOOR UNIT** | **COMPRESSOR** | **POWER SOURCE** | | **V/Ph/Hz** | 230 / 1 / 50 | 400 / 3 / 50 |
| | | **COMPRESSOR TYPE** | | | ROTARY | SCROLL |
| | | **CAPACITOR** | | **µF** | 50 | NIL |
| | | **LOCK ROTOR AMP** | | **A** | 70 | 40 |
| | | **RATED RUNNING CURRENT** | | **A** | 11.5 | 4.8 |
| | | **RATED INPUT POWER** | | **W** | 2236 | 2669 |
| | | **PROTECTION DEVICE** | | | INTERNAL OVERLOAD PROTECTION | |
| | **FAN** | **POWER SOURCE** | | **V/Ph/Hz** | 230 / 1 / 50 | |
| | | **FAN TYPE / DRIVE** | | | PROPELLER / DIRECT | |
| | | **BLADE MATERIAL** | | | METAL | |
| | | **DIAMETER** | | **mm/in** | 450 / 18 | |
| | | **RATED RUNNING CURRENT** | | **A** | 0.69 | 0.62 |
| | | **RATED INPUT POWER** | | **W** | 137 | 140 |
| | **COIL** | **TUBE** | **MATERIAL** | | S.I.G.C | |
| | | | **DIAMETER** | **mm/in** | 9.52 / 3/8 | |
| | | | **THICKNESS** | **mm/in** | 0.35 / 0.014 | |
| | | **FIN** | **MATERIAL** | | ALUMINIUM (SLIT FIN TYPE) | |
| | | | **THICKNESS** | **mm/in** | 0.11 / 0.0043 | |
| | | | **ROW** | | 1 | |
| | | | **FIN PER INCH** | | 18 | 20 |
| | | **FACE AREA** | | **$m^2/ft^2$** | 1.09 / 11.76 | |
| | **DIMENSION** | | **HEIGHT** | **mm/in** | 841 / 33.1 | |
| | | | **WIDTH** | **mm/in** | 572 / 22.5 | |
| | | | **DEPTH** | **mm/in** | 572 / 22.5 | |
| | **WEIGHT** | | | **kg** | 64 | 70 |
| | **SOUND PRESSURE LEVEL** | | | **dBA** | | |
| | **CASING** | | **MATERIAL** | | GALVANISED MILD STEEL | |
| | | | **THICKNESS** | **mm/in** | 1.2 / 0.047 | |
| | | | **FINISHING** | | POLYESTER POWDER | |
| | **PIPE** | **TYPE** | | | BRAZED VALVE | |
| | | **SIZE** | **LIQUID** | **mm/in** | 9.52 / 3/8 | |
| | | | **GAS** | **mm/in** | 15.88 / 5/8 | |
| | **PACKING DIMENSION** | | **HEIGHT** | **mm/in** | 950 / 37.4 | |
| | | | **WIDTH** | **mm/in** | 660 / 26.0 | |
| | | | **DEPTH** | **mm/in** | 660 / 26.0 | |

*1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.*
*2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO*
*3) NOMINAL COOLING CAPACITY IS BASED ON THE CONDITIONS BELOW :*
*a) COOLING - 27.0°C DB / 19.0°C WB INDOOR AND 35°C DB OUTDOOR*
*4) ALLOWABLE OPERATING RANGE*
*a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR*
*5) THE UNIT WILL OPERATE SATISFACTORILY UP TO AN OUTSIDE TEMPERATURE OF 51.7 °C WITHOUT TRIPPING OR OVERHEATING.*

*Abbreviation*
*S.B.C. - SEAMLESS BARE COPPER*
*S.I.G.C - SEAMLESS INNER GROOVE COPPER*

# CEILING CONVERTIBLE – VERTICAL CONDENSING UNIT (COOLING ONLY)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MODEL** | | **INDOOR UNIT** | | MCM 025D | MCM 030D | MCM 040D | MCM 040D | MCM 050D | MCM 062C |
| | | **OUTDOOR UNIT** | | MVCU 025A | MVCU 030A | MVCU 035A | MVCU 040A | MVCU 050A | MVCU 060A |
| **NOMINAL** | | | **kcal/h** | 6048 | 7560 | 9073 | 10080 | 12348 | 14364 |
| **COOLING** | | | **W** | 7034 | 8792 | 10551 | 11723 | 14360 | 16705 |
| **CAPACITY** | | | **Btu/h** | 24000 | 30000 | 36000 | 40000 | 49000 | 57000 |
| **NOMINAL TOTAL POWER** | | | **W** | 2490 | 2941 | 3397 | 3227 | 4285 | 5111 |
| **NOMINAL TOTAL CURRENT** | | | **A** | 12.6 | 5.2 | 5.9 | 5.8 | 8.2 | 8.7 |
| **INDOOR UNIT** | **POWER SOURCE** | | **V/Ph/Hz** | 220-240 / 1 / 50 | | | | | |
| | **REFRIGERANT / CONTROL** | | | R22 / OUTDOOR CAP. TUBE | R22 / INDOOR CAP. TUBE | | | | |
| | **FAN** | **AIR FLOW** | **cfm / L/s** | 660 / 312 | 730 / 345 | 1110 / 524 | | 1110 / 524 | 1550 / 732 |
| | | **FAN MOTOR** | | 4 POLES X 95W | 4 POLES X 95W | 4 POLES X 145W | | 4 POLES X 145W | 2 x 4 POLES x 80W |
| | | **RATED INPUT POWER** | **W** | 130 | 132 | 240 | | 240 | 327 |
| | | **RATED RUNNING CURRENT** | **A** | 0.58 | 0.58 | 1.04 | | 1.04 | 1.40 |
| | **COIL** | **TUBE** **MATERIAL** | | S.B.C. | S.I.G.C. | S.B.C. | | S.I.G.C. | |
| | | **TUBE** **DIAMETER** | **mm/in** | 9.52 / 3/8 | | | | | |
| | | **TUBE** **THICKNESS** | **mm/in** | 0.35 / 0.014 | | | | | |
| | | **FIN** **MATERIAL** | | ALUMINIUM | | ALUMINIUM (HYDROPHILIC TYPE) | | | ALUMINIUM |
| | | **FIN** **THICKNESS** | **mm/in** | 0.11 / 0.0043 | | | | | |
| | | **FIN** **ROW** | | 3 | 3 | 4 | | 4 | 4 |
| | | **FIN** **FIN PER INCH** | | 12 | 12 | 12 | | 12 | 14 |
| | | **FACE AREA** | **$m^2/ft^2$** | 0.19 / 2.06 | 0.24 / 2.58 | 0.36 / 3.95 | | 0.36 / 3.95 | 0.42 / 4.51 |
| | **DIMENSION** | **HEIGHT** | **mm/in** | 214 / 8.4 | 249 / 9.8 | 249 / 9.8 | | | 285 / 11.2 |
| | | **WIDTH** | **mm/in** | 1214 / 47.8 | 1214 / 47.8 | 1714 / 67.4 | | | 1903 / 74.9 |
| | | **DEPTH** | **mm/in** | 670 / 26.3 | 670 / 26.3 | 670 / 26.3 | | | 680 / 26.8 |
| | **WEIGHT** | | **kg** | 43 | 45 | 70 | | 70 | 85 |
| | **SOUND PRESSURE LEVEL - H / M / L** | | **dBA** | 54 / 53 / 50 | 51 / 50 / 48 | 54 / 53 / 52 | | 54 / 53 / 52 | 56 / 53 / 46 |
| | **CONTROL** | **ROOM TEMPERATURE** | | MICROCOMPUTER CONTROLLED THERMOSTAT | | | | | |
| | | **AIR DISCHARGE** | | AUTOMATIC LOUVER (UP & DOWN) & MANUAL LOUVER (BOTTOM) | | | | | MANUAL LOUVER |
| | | **OPERATION** | | LCD WIRELESS / LED WIRED MICROCOMPUTER REMOTE CONTROL | | | | | |
| | **CONDENSATE DRAIN SIZE** | | **mm/in** | 19.05 / 3/4 | | | | | |
| | **AIR FILTER** | | | WASHABLE SARANET (OPTIONAL IONIZER FILTER) | | | | | |
| | **PACKING DIMENSION** | **HEIGHT** | **mm/in** | 301 / 11.9 | 345 / 13.6 | 345 / 13.6 | | | 368 / 14.5 |
| | | **WIDTH** | **mm/in** | 1311 / 51.6 | 1361 / 53.5 | 1816 / 71.4 | | | 1984 / 78.1 |
| | | **DEPTH** | **mm/in** | 760 / 29.9 | 760 / 29.9 | 760 / 29.9 | | | 760 / 29.9 |
| **OUTDOOR UNIT** | **COMPRESSOR** | **POWER SOURCE** | **V/Ph/Hz** | 230 / 1 / 50 | 400/3/50 | | | | |
| | | **COMPRESSOR TYPE** | | ROTARY | SCROLL | | | | |
| | | **CAPACITOR** | **µF** | 50 | NIL | | | | |
| | | **LOCK ROTOR AMP** | **A** | 70 | 40 | 46 | 48 | 66 | 74 |
| | | **RATED RUNNING CURRENT** | **A** | 11.5 | 4.8 | 5.3 | 5.2 | 7.5 | 7.9 |
| | | **RATED INPUT POWER** | **W** | 2223 | 2669 | 2882 | 2739 | 3760 | 4499 |
| | | **PROTECTION DEVICE** | | INTERNAL OVERLOAD PROTECTION | | | | | |
| | **FAN** | **POWER SOURCE** | **V/Ph/Hz** | 230 / 1 / 50 | | | | | |
| | | **FAN TYPE / DRIVE** | | PROPELLER / DIRECT | | | | | |
| | | **BLADE MATERIAL** | | METAL | | | | | |
| | | **DIAMETER** | **mm/in** | | 450 / 18 | | 600 / 24 | | |
| | | **RATED RUNNING CURRENT** | **A** | 0.69 | 0.62 | 1.20 | 1.14 | 1.28 | 1.28 |
| | | **RATED INPUT POWER** | **W** | 137 | 140 | 275 | 248 | 285 | 285 |
| | **COIL** | **TUBE** **MATERIAL** | | S.I.G.C | | | | | |
| | | **TUBE** **DIAMETER** | **mm/in** | 9.52 / 3/8 | | | | | |
| | | **TUBE** **THICKNESS** | **mm/in** | 0.35 / 0.014 | | | | | |
| | | **FIN** **MATERIAL** | | ALUMINIUM (SLIT FIN TYPE) | | | | | |
| | | **FIN** **THICKNESS** | **mm/in** | 0.11 / 0.0043 | | | | | |
| | | **FIN** **ROW** | | 1 | | | | | |
| | | **FIN** **FIN PER INCH** | | 18 | 20 | 22 | | | |
| | | **FACE AREA** | **$m^2/ft^2$** | | 1.09 / 11.76 | | 1.72 / 18.59 | 1.93 / 20.78 | |
| | **DIMENSION** | **HEIGHT** | **mm/in** | | 841 / 33.1 | | 984 / 38.7 | 1086 / 42.8 | |
| | | **WIDTH** | **mm/in** | | 572 / 22.5 | | 762 / 30.0 | 762 / 30.0 | |
| | | **DEPTH** | **mm/in** | | 572 / 22.5 | | 762 / 30.0 | 762 / 30.0 | |
| | **WEIGHT** | | **kg** | 64 | 70 | 70 | 93 | 100 | 102 |
| | **SOUND PRESSURE LEVEL** | | **dBA** | | | | 57 | 59 | 62 |
| | **CASING** | **MATERIAL** | | GALVANISED MILD STEEL | | | | | |
| | | **THICKNESS** | **mm/in** | 1.2 / 0.047 | | | | | |
| | | **FINISHING** | | POLYESTER POWDER | | | | | |
| | **PIPE** | **TYPE** | | BRAZED VALVE | | | | | |
| | | **SIZE** **INDOOR** **LIQUID** | **mm/in** | | 9.52 / 3/8 | | 9.52 / 3/8 | | 12.70 / 1/2 |
| | | **SIZE** **INDOOR** **GAS** | **mm/in** | 15.88 / 5/8 | 15.88 / 5/8 | 19.05 / 3/4 | 19.05 / 3/4 | | 19.05 / 3/4 |
| | | **SIZE** **OUTDOOR** **LIQUID** | **mm/in** | | 9.52 / 3/8 | | 9.52 / 3/8 | | 12.70 / 1/2 |
| | | **SIZE** **OUTDOOR** **GAS** | **mm/in** | 15.88 / 5/8 | 15.88 / 5/8 | 19.05 / 3/4 | 19.05 / 3/4 | | 22.23 / 7/8 |
| | **PACKING DIMENSION** | **HEIGHT** | **mm/in** | | 950 / 37.4 | | 1090 / 42.9 | 1190 / 46.9 | |
| | | **WIDTH** | **mm/in** | | 660 / 26.0 | | 860 / 33.9 | 860 / 33.9 | |
| | | **DEPTH** | **mm/in** | | 660 / 26.0 | | 860 / 33.9 | 860 / 33.9 | |

*1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.*
*2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO*
*3) NOMINAL COOLING CAPACITY IS BASED ON THE CONDITIONS BELOW :*
*a) COOLING - 27.0°C DB / 19.0°C WB INDOOR AND 35°C DB OUTDOOR*
*4) ALLOWABLE OPERATING RANGE*
*a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR*
*5) THE UNIT WILL OPERATE SATISFACTORILY UP TO AN OUTSIDE TEMPERATURE OF 51.7 °C WITHOUT TRIPPING OR OVERHEATING.*

*Abbreviation*
*S.B.C. - SEAMLESS BARE COPPER*
*S.I.G.C - SEAMLESS INNER GROOVE COPPER*

# CEILING CASSETTE A SERIES – VERTICAL CONDENSING UNIT (COOLING ONLY)

| MODEL | | | INDOOR UNIT | | MCK 025A | MCK 030A | MCK 040A | | MCK 050A |
|---|---|---|---|---|---|---|---|---|---|
| | | | OUTDOOR UNIT | | MVCU 025A | MVCU 030A | MVCU 035A | MVCU 040A | MVCU 050A |
| NOMINAL | | | | kcal/h | 6048 | 7813 | 9073 | 10080 | 12348 |
| COOLING | | | | W | 7034 | 9086 | 10551 | 11723 | 14360 |
| CAPACITY | | | | Btu/h | 24000 | 31000 | 36000 | 40000 | 49000 |
| NOMINAL TOTAL POWER | | | | W | 2519 | 2984 | 3429 | 3259 | 4356 |
| NOMINAL TOTAL CURRENT | | | | A | 12.7 | 5.2 | 6.0 | 5.9 | 8.2 |
| INDOOR UNIT | POWER SOURCE | | | V/Ph/Hz | 220-240 / 1 / 50 | | | | |
| | REFRIGERANT / CONTROL | | | | R22 / OUTDOOR CAP.TUBE | R22 / INDOOR CAP.TUBE | | | |
| | FAN | AIR FLOW | | cfm / L/s | 810 / 382 | 920 / 434 | 1030 / 486 | | 1080 / 510 |
| | | FAN MOTOR | | | 6 POLES x 45W | 6 POLES x 60W | 6 POLES x 83W | | 6 POLES x 120W |
| | | RATED INPUT POWER | | W | 151 | 164 | 192 | | 253 |
| | | RATED RUNNING CURRENT | | A | 0.65 | 0.69 | 0.80 | | 1.08 |
| | COIL | TUBE | MATERIAL | | S.B.C | | S.I.G.C. | | |
| | | | DIAMETER | mm/in | 9.52 / 3/8 | | 7.0 / 0.28 | | |
| | | | THICKNESS | mm/in | 0.35 /0.014 | | 0.27 / 0.01 | | |
| | | FIN | MATERIAL | | ALUMINIUM | | ALUMINIUM (HYDROPHILIC TYPE) | | |
| | | | THICKNESS | mm/in | 0.11 / 0.0043 | | | | |
| | | | ROW | | 2 | 2 | 3 | | |
| | | | FIN PER INCH | | 14 | 16 | 20 | | |
| | | FACE AREA | | $m^2/ft^2$ | 0.469 / 5.022 | | 0.56 / 6.03 | | |
| | DIMENSION | | HEIGHT | mm/in | 335 (363) / 13.2 (14.3) | | | | |
| | | | WIDTH | mm/in | 820 (930) / 32.2 (36.6) | | | | |
| | ( ) - WITH PANEL | | DEPTH | mm/in | 820 (930) / 32.2 (36.6) | | | | |
| | WEIGHT (UNIT + PANEL) | | | kg | 32 + 4 | 35 + 4 | 38 + 4 | | 40 + 4 |
| | SOUND PRESSURE LEVEL - H / M / L | | | dBA | 45 / 42 / 40 | 49 / 45 / 43 | 51 / 48 / 46 | | 53 / 52 / 50 |
| | CONTROL | | ROOM TEMPERATURE | | MICROCOMPUTER CONTROLLED THERMOSTAT | | | | |
| | | | AIR DISCHARGE | | 4-WAY AUTOMATIC LOUVER (UP & DOWN) | | | | |
| | | | OPERATION | | LCD WIRELESS / LED WIRED MICROCOMPUTER REMOTE CONTROL | | | | |
| | CONDENSATE DRAIN SIZE | | | mm/in | 19.05 / 3/4 | | | | |
| | AIR FILTER | | | | CORRUGATED WASHABLE SARANET (OPTIONAL IONIZER FILTER) | | | | |
| | PACKING DIMENSION ( ) - PANEL | | HEIGHT | mm/in | 380 (130) / 15.0 (5.1) | | | | |
| | | | WIDTH | mm/in | 920 (1020) / 36.2 (40.2) | | | | |
| | | | DEPTH | mm/in | 920 (1000) / 36.2 (39.4) | | | | |
| OUTDOOR UNIT | POWER SOURCE | | | V/Ph/Hz | 230 / 1 / 50 | 400/3/50 | | | |
| | COMPRESSOR | COMPRESSOR TYPE | | | ROTARY | SCROLL | | | |
| | | CAPACITOR | | µF | 50 | NIL | | | |
| | | LOCK ROTOR AMP | | A | 70 | 40 | 46 | 48 | 66 |
| | | RATED RUNNING CURRENT | | A | 11.5 | 4.8 | 5.3 | 5.2 | 7.5 |
| | | RATED INPUT POWER | | W | 2231 | 2680 | 2962 | 2819 | 3818 |
| | | PROTECTION DEVICE | | | INTERNAL OVERLOAD PROTECTION | | | | |
| | FAN | POWER SOURCE | | V/Ph/Hz | 230 / 1 / 50 | | | | |
| | | FAN TYPE / DRIVE | | | PROPELLER / DIRECT | | | | |
| | | BLADE MATERIAL | | | METAL | | | | |
| | | DIAMETER | | mm/in | 450 / 18 | | | 600 / 24 | |
| | | RATED RUNNING CURRENT | | A | 0.69 | 0.62 | 1.20 | 1.14 | 1.28 |
| | | RATED INPUT POWER | | W | 137 | 140 | 275 | 248 | 285 |
| | COIL | TUBE | MATERIAL | | S.I.G.C | | | | |
| | | | DIAMETER | mm/in | 9.52 / 3/8 | | | | |
| | | | THICKNESS | mm/in | 0.35 / 0.014 | | | | |
| | | FIN | MATERIAL | | ALUMINIUM (SLIT FIN TYPE) | | | | |
| | | | THICKNESS | mm/in | 0.11 / 0.0043 | | | | |
| | | | ROW | | 1 | | | | |
| | | | FIN PER INCH | | 18 | 20 | 22 | | |
| | | FACE AREA | | $m^2/ft^2$ | 1.09 / 11.76 | | | 1.72 / 18.59 | 1.93 / 20.78 |
| | DIMENSION | | HEIGHT | mm/in | 841 / 33.1 | | | 984 / 38.7 | 1086 / 42.8 |
| | | | WIDTH | mm/in | 572 / 22.5 | | | 762 / 30.0 | 762 / 30.0 |
| | | | DEPTH | mm/in | 572 / 22.5 | | | 762 / 30.0 | 762 / 30.0 |
| | WEIGHT | | | kg | 64 | 70 | 70 | 93 | 100 |
| | SOUND PRESSURE LEVEL | | | dBA | | | | 57 | 59 |
| | CASING | | MATERIAL | | GALVANISED MILD STEEL | | | | |
| | | | THICKNESS | mm/in | 1.2 / 0.047 | | | | |
| | | | FINISHING | | POLYESTER POWDER | | | | |
| | PIPE | TYPE | | | BRAZED VALVE | | | | |
| | | SIZE | LIQUID | mm/in | 9.52 / 3/8 | | | | |
| | | | GAS | mm/in | 15.88 / 5/8 | | 19.05 / 3/4 | | |
| | PACKING DIMENSION | | HEIGHT | mm/in | 950 / 37.4 | | | 1090 / 42.9 | 1190 / 46.9 |
| | | | WIDTH | mm/in | 660 / 26.0 | | | 860 / 33.9 | 860 / 33.9 |
| | | | DEPTH | mm/in | 660 / 26.0 | | | 860 / 33.9 | 860 / 33.9 |

*1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.*
*2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO*
*3) NOMINAL COOLING CAPACITY IS BASED ON THE CONDITIONS BELOW :*
*a) COOLING - 27.0°C DB / 19.0°C WB INDOOR AND 35°C DB OUTDOOR*
*4) ALLOWABLE OPERATING RANGE*
*a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR*
*5) THE UNIT WILL OPERATE SATISFACTORILY UP TO AN OUTSIDE TEMPERATURE OF 51.7 °C WITHOUT TRIPPING OR OVERHEATING.*

*Abbreviation*
*S.B.C. - SEAMLESS BARE COPPER*
*S.I.G.C - SEAMLESS INNER GROOVE COPPER*

# CEILING CASSETTE B SERIES – VERTICAL CONDENSING UNIT (COOLING ONLY)

| | | | | | | |
|---|---|---|---|---|---|---|
| **MODEL** | | | **INDOOR UNIT** | | MCK 025B | MCK 030B |
| | | | **OUTDOOR UNIT** | | MVCU 025A | MVCU 030A |
| **NOMINAL** | | | | **kcal/h** | 6048 | 7560 |
| **COOLING** | | | | **W** | 7034 | 8792 |
| **CAPACITY** | | | | **Btu/h** | 24000 | 30000 |
| **NOMINAL TOTAL POWER** | | | | **W** | 2450 | 2927 |
| **NOMINAL TOTAL CURRENT** | | | | **A** | 12.4 | 5.1 |
| **INDOOR UNIT** | **POWER SOURCE** | | | **V/Ph/Hz** | 220-240 / 1/ 50 | |
| | **REFRIGERANT / CONTROL** | | | | R22 / OUTDOOR CAP. TUBE | R22 / INDOOR CAP TUBE |
| | **FAN** | **AIR FLOW** | | **cfm / L/s** | 500 / 236 | 660 / 312 |
| | | **FAN MOTOR** | | | 6 POLES | 6 POLES |
| | | **RATED INPUT POWER** | | **W** | 79 | 108 |
| | | **RATED RUNNING CURRENT** | | **A** | 0.3 | 0.5 |
| | **COIL** | **TUBE** | **MATERIAL** | | S.I.G.C. | |
| | | | **DIAMETER** | **mm/in** | 9.52 / 3/8 | |
| | | | **THICKNESS** | **mm/in** | 0.35 / 0.014 | |
| | | **FIN** | **MATERIAL** | | ALUMINIUM (SLIT FIN) | |
| | | | **THICKNESS** | **mm/in** | 0.11 / 0.0043 | |
| | | | **ROW** | | 2 | |
| | | | **FIN PER INCH** | | 14 | |
| | | **FACE AREA** | | **$m^2/ft^2$** | 0.38 / 4.1 | |
| | **DIMENSION ( ) - WITH PANEL** | | **HEIGHT** | **mm/in** | 293 (345) / 11.5 (13.6) | |
| | | | **WIDTH** | **mm/in** | 650 (727) / 25.6 (28.6) | |
| | | | **DEPTH** | **mm/in** | 650 (727) / 25.6 (28.6) | |
| | **WEIGHT (UNIT + PANEL)** | | | **kg** | 31 + 3 | 32 + 3 |
| | **SOUND PRESSURE LEVEL - H / M / L** | | | **dBA** | 45 / 42 / 39 | 48 / 45 / 42 |
| | **CONTROL** | | **ROOM TEMPERATURE** | | MICROCOMPUTER CONTROLLED THERMOSTAT | |
| | | | **AIR DISCHARGE** | | 4 WAY AUTOMATIC LOUVER (UP & DOWN) | |
| | | | **OPERATION** | | WIRELESS OR WIRED MICROCOMPUTER REMOTE CONTROL | |
| | **CONDENSATE DRAIN SIZE** | | | **mm/in** | 19.05 / 3/4 | |
| | **AIR FILTER** | | | | CORRUGATED WASHABLE SARANET (OPTIONAL IONIZER FILTER) | |
| | **PACKING DIMENSION ( ) - PANEL** | | **HEIGHT** | **mm/in** | 360 (110) / 14.2 (4.3) | |
| | | | **WIDTH** | **mm/in** | 725 (840) / 28.5 (33.1) | |
| | | | **DEPTH** | **mm/in** | 725 (840) / 28.5 (33.1) | |
| **OUTDOOR UNIT** | **POWER SOURCE** | | | **V/Ph/Hz** | 230 / 1 / 50 | 400 / 3 / 50 |
| | **COMPRESSOR** | **COMPRESSOR TYPE** | | | ROTARY | SCROLL |
| | | **CAPACITOR** | | **µF** | 50 | NIL |
| | | **LOCK ROTOR AMP** | | **A** | 70 | 40 |
| | | **RATED RUNNING CURRENT** | | **A** | 11.5 | 4.8 |
| | | **RATED INPUT POWER** | | **W** | 2234 | 2679 |
| | | **PROTECTION DEVICE** | | | INTERNAL OVERLOAD PROTECTION | |
| | **FAN** | **POWER SOURCE** | | **V/Ph/Hz** | 230 / 1 / 50 | |
| | | **FAN TYPE / DRIVE** | | | PROPELLER / DIRECT | |
| | | **BLADE MATERIAL** | | | METAL | |
| | | **DIAMETER** | | **mm/in** | 450 / 18 | |
| | | **RATED RUNNING CURRENT** | | **A** | 0.69 | 0.62 |
| | | **RATED INPUT POWER** | | **W** | 137 | 140 |
| | **COIL** | **TUBE** | **MATERIAL** | | S.I.G.C | |
| | | | **DIAMETER** | **mm/in** | 9.52 / 3/8 | |
| | | | **THICKNESS** | **mm/in** | 0.35 / 0.014 | |
| | | **FIN** | **MATERIAL** | | ALUMINIUM (SLIT FIN TYPE) | |
| | | | **THICKNESS** | **mm/in** | 0.11 / 0.0043 | |
| | | | **ROW** | | 1 | |
| | | | **FIN PER INCH** | | 18 | 20 |
| | | **FACE AREA** | | **$m^2/ft^2$** | 1.09 / 11.76 | |
| | **DIMENSION** | | **HEIGHT** | **mm/in** | 841 / 33.1 | |
| | | | **WIDTH** | **mm/in** | 572 / 22.5 | |
| | | | **DEPTH** | **mm/in** | 572 / 22.5 | |
| | **WEIGHT** | | | **kg** | 64 | 70 |
| | **SOUND PRESSURE LEVEL** | | | **dBA** | | |
| | **CASING** | | **MATERIAL** | | GALVANISED MILD STEEL | |
| | | | **THICKNESS** | **mm/in** | 1.2 / 0.047 | |
| | | | **FINISHING** | | POLYESTER POWDER | |
| | **PIPE** | **TYPE** | | | BRAZED VALVE | |
| | | **SIZE** | **LIQUID** | **mm/in** | 9.52 / 3/8 | |
| | | | **GAS** | **mm/in** | 15.88 / 5/8 | |
| | **PACKING DIMENSION** | | **HEIGHT** | **mm/in** | 950 / 37.4 | |
| | | | **WIDTH** | **mm/in** | 660 / 26.0 | |
| | | | **DEPTH** | **mm/in** | 660 / 26.0 | |

*1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.*
*2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO*
*3) NOMINAL COOLING CAPACITY IS BASED ON THE CONDITIONS BELOW :*
*a) COOLING - 27.0°C DB / 19.0°C WB INDOOR AND 35°C DB OUTDOOR*
*4) ALLOWABLE OPERATING RANGE*
*a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR*
*5) THE UNIT WILL OPERATE SATISFACTORILY UP TO AN OUTSIDE TEMPERATURE OF 51.7 °C WITHOUT TRIPPING OR OVERHEATING.*

*Abbreviation*
*S.B.C. - SEAMLESS BARE COPPER*
*S.I.G.C - SEAMLESS INNER GROOVE COPPER*

# CEILING CONCEALED – VERTICAL CONDENSING UNIT (COOLING ONLY)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **MODEL** | | **INDOOR UNIT** | | MCC 025C | MCC 030C | MCC 040C | | MCC 050C | MCC 060C |
| | | **OUTDOOR UNIT** | | MVCU 025A | MVCU 030A | MVCU 035A | MVCU 040A | MVCU 050A | MVCU 060A |
| **NOMINAL** | | | **kcal/h** | 6048 | 7813 | 9073 | 10080 | 12348 | 14364 |
| **COOLING** | | | **W** | 7034 | 9086 | 10551 | 11723 | 14360 | 16705 |
| **CAPACITY** | | | **Btu/h** | 24000 | 31000 | 36000 | 40000 | 49000 | 57000 |
| **EFFECTIVE TOTAL POWER** | | | **W** | 2494 | 3070 | 3570 | 3400 | 4460 | 5160 |
| **NOMINAL TOTAL POWER** | | | **W** | 2540 | 3179 | 3685 | 3515 | 4624 | 5376 |
| **NOMINAL TOTAL CURRENT** | | | **A** | 12.8 | 5.5 | 6.3 | 6.3 | 8.7 | 9.1 |
| **INDOOR UNIT** | **POWER SOURCE** | | **V/Ph/Hz** | 220-240 / 1 / 50 | | | | | |
| | **REFRIGERANT / CONTROL** | | | R22 / OUTDOOR CAP. TUBE | | | R22 / CAPILLARY TUBE IN INDOOR | | |
| | **FAN** | **AIR FLOW** | **cfm / L/s** | 730 / 345 | 900 / 429 | 1100 / 517 | | 1590 / 750 | 1650 / 779 |
| | | **STATIC PRESSURE** | **mm Aq** | 5 | 21 | 21 | | 18 | 18 |
| | | **FAN MOTOR** | | 4 POLES x 100W | 4 POLES x 320W | 4 POLES x 400W | 4 POLES x 400W | 4 POLES x 480W | 4 POLES x 600W |
| | | **RATED INPUT POWER** | **W** | 180 | 421 | 550 | 448 | 510 | 562 |
| | | **RATED RUNNING CURRENT** | **A** | 0.77 | 1.90 | 2.60 | 1.98 | 2.26 | 2.47 |
| | **COIL** | **TUBE** **MATERIAL** | | S.B.C. | | | | | |
| | | **TUBE** **DIAMETER** | **mm/in** | 9.52 / 3/8 | | | | | |
| | | **TUBE** **THICKNESS** | **mm/in** | 0.35 / 0.014 | | | | | |
| | | **FIN** **MATERIAL** | | ALUMINIUM | | | | | |
| | | **FIN** **THICKNESS** | **mm/in** | 0.11/ 0.0043 | 0.127 / 0.005 | | | | |
| | | **FIN** **ROW** | | 3 | | 3 | | | |
| | | **FIN** **FIN PER INCH** | | 12 | | 14 | | | |
| | | **FACE AREA** | **$m^2/ft^2$** | 0.203 / 2.187 | 0.27 / 2.98 | 0.31 / 3.44 | | 0.40 / 4.40 | 0.47 / 5.16 |
| | **DIMENSION** | **HEIGHT** | **mm/in** | 261 / 10.3 | 378 / 14.9 | | | | |
| | | **WIDTH** | **mm/in** | 1200 / 47.2 | 929 / 36.6 | 1045 / 41.1 | | 1299 / 51.1 | 1499 / 59.0 |
| | | **DEPTH** | **mm/in** | 411 / 16.2 | 541 / 21.3 | | | | |
| | **WEIGHT** | | **kg** | 25 | 39 | 42 | | 54 | 62 |
| | **SOUND PRESSURE LEVEL ( SH* / H / M / L )** | | **dBA** | 40 / 39 / 36 | 49* / 46 / 42 / 38 | 51* / 49 / 45 / 41 | | 53* / 52 / 50 / 47 | 55* / 53 / 50 / 47 |
| | **CONTROL** | **ROOM TEMPERATURE** | | MICROCOMPUTER CONTROLLED THERMOSTAT | | | | | |
| | | **OPERATION** | | SLM WIRED HANDSET (OPTIONAL AC5300 REMOTE CONTROLLER) | | | | | |
| | **CONDENSATE DRAIN SIZE** | | **mm/in** | 19.05 / 3/4 | | | | | |
| | **AIR FILTER** | | | WASHABLE SARAN NET | | | | | |
| | **PACKING DIMENSION** | **HEIGHT** | **mm/in** | 410 / 16.1 | 399 / 15.7 | | | | |
| | | **WIDTH** | **mm/in** | 1386 / 54.6 | 1110 / 43.7 | 1229 / 48.4 | | 1481 / 58.3 | 1685 / 66.3 |
| | | **DEPTH** | **mm/in** | 535 / 21.1 | 615 / 24.2 | | | | |
| **OUTDOOR UNIT** | **COMPRESSOR** **POWER SOURCE** | | **V/Ph/Hz** | 230 / 1 / 50 | 400 / 3 / 50 | | | | |
| | **COMPRESSOR** **COMPRESSOR TYPE** | | | ROTARY | SCROLL | | | | |
| | **COMPRESSOR** **CAPACITOR** | | **µF** | 50 | NIL | NIL | NIL | NIL | NIL |
| | **COMPRESSOR** **LOCK ROTOR AMP.** | | **A** | 70 | 40 | 46 | 48 | 66 | 74 |
| | **COMPRESSOR** **RATED RUNNING CURRENT** | | **A** | 11.5 | 4.8 | 5.3 | 5.2 | 7.5 | 7.9 |
| | **COMPRESSOR** **RATED INPUT POWER** | | **W** | 2223 | 2618 | 2860 | 2819 | 3829 | 4529 |
| | **COMPRESSOR** **PROTECTION DEVICE** | | | INTERNAL OVERLOAD PROTECTION | | | | | |
| | **FAN** **POWER SOURCE** | | **V/Ph/Hz** | 230 / 1 / 50 | | | | | |
| | **FAN** **FAN TYPE / DRIVE** | | | PROPELLER / DIRECT | | | | | |
| | **FAN** **BLADE MATERIAL** | | | METAL | | | | | |
| | **FAN** **DIAMETER** | | **mm/in** | 450 / 18 | | | 600 / 24 | | |
| | **FAN** **RATED RUNNING CURRENT** | | **A** | 0.69 | 0.62 | 1.20 | 1.14 | 1.28 | 1.28 |
| | **FAN** **RATED INPUT POWER** | | **W** | 137 | 140 | 275 | 248 | 285 | 285 |
| | **COIL** **TUBE** **MATERIAL** | | | S.I.G.C | | | | | |
| | **COIL** **TUBE** **DIAMETER** | | **mm/in** | 9.52 / 3/8 | | | | | |
| | **COIL** **TUBE** **THICKNESS** | | **mm/in** | 0.35 / 0.014 | | | | | |
| | **COIL** **FIN** **MATERIAL** | | | ALUMINIUM (SLIT FIN TYPE) | | | | | |
| | **COIL** **FIN** **THICKNESS** | | **mm/in** | 0.11 / 0.0043 | | | | | |
| | **COIL** **FIN** **ROW** | | | 1 | | | | | |
| | **COIL** **FIN** **FIN PER INCH** | | | 18 | 20 | 22 | | | |
| | **FACE AREA** | | **$m^2/ft^2$** | 1.09 / 11.76 | | | 1.72 / 18.59 | 1.93 / 20.78 | |
| | **DIMENSION** | **HEIGHT** | **mm/in** | 841 / 33.1 | | | 984 / 38.7 | 1086 / 42.8 | |
| | | **WIDTH** | **mm/in** | 572 / 22.5 | | | 762 / 30.0 | 762 / 30.0 | |
| | | **DEPTH** | **mm/in** | 572 / 22.5 | | | 762 / 30.0 | 762 / 30.0 | |
| | **WEIGHT** | | **kg** | 64 | 70 | 70 | 93 | 100 | 102 |
| | **SOUND PRESSURE LEVEL** | | **dBA** | | | | 57 | 59 | 62 |
| | **CASING** | **MATERIAL** | | GALVANISED MILD STEEL | | | | | |
| | | **THICKNESS** | **mm/in** | 1.2 / 0.047 | | | | | |
| | | **FINISHING** | | POLYESTER POWDER | | | | | |
| | **PIPE** **TYPE** | | | BRAZED VALVE | | | | | |
| | **PIPE** **SIZE** **INDOOR** | **LIQUID** | **mm/in** | 9.52 / 3/8 | | | 9.52 / 3/8 | | 12.70 / 1/2 |
| | **PIPE** **SIZE** **INDOOR** | **GAS** | **mm/in** | 15.88 / 5/8 | | 19.05 / 3/4 | 19.05 / 3/4 | | 19.05 / 3/4 |
| | **PIPE** **SIZE** **OUTDOOR** | **LIQUID** | **mm/in** | 9.52 / 3/8 | | | 9.52 / 3/8 | | 12.70 / 1/2 |
| | **PIPE** **SIZE** **OUTDOOR** | **GAS** | **mm/in** | 15.88 / 5/8 | | 19.05 / 3/4 | 19.05 / 3/4 | | 22.23 / 7/8 |
| | **PACKING DIMENSION** | **HEIGHT** | **mm/in** | 950 / 37.4 | | | 1090 / 42.9 | 1190 / 46.9 | |
| | | **WIDTH** | **mm/in** | 660 / 26.0 | | | 860 / 33.9 | 860 / 33.9 | |
| | | **DEPTH** | **mm/in** | 660 / 26.0 | | | 860 / 33.9 | 860 / 33.9 | |

*1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.*
*2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO*
*3) NOMINAL COOLING CAPACITY IS BASED ON THE CONDITIONS BELOW :*
*a) COOLING - 27.0°C DB / 19.0°C WB INDOOR AND 35°C DB OUTDOOR*
*4) ALLOWABLE OPERATING RANGE*
*a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR*
*5) THE UNIT WILL OPERATE SATISFACTORILY UP TO AN OUTSIDE TEMPERATURE OF 51.7 °C WITHOUT TRIPPING OR OVERHEATING.*

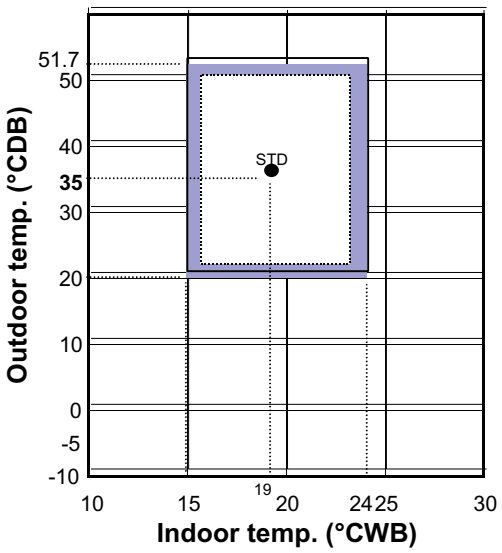
*Abbreviation*
*S.B.C. - SEAMLESS BARE COPPER*
*S.I.G.C - SEAMLESS INNER GROOVE COPPER*

# Operating Range

Ensure the operating temperature is in allowable range.

## Cooling only

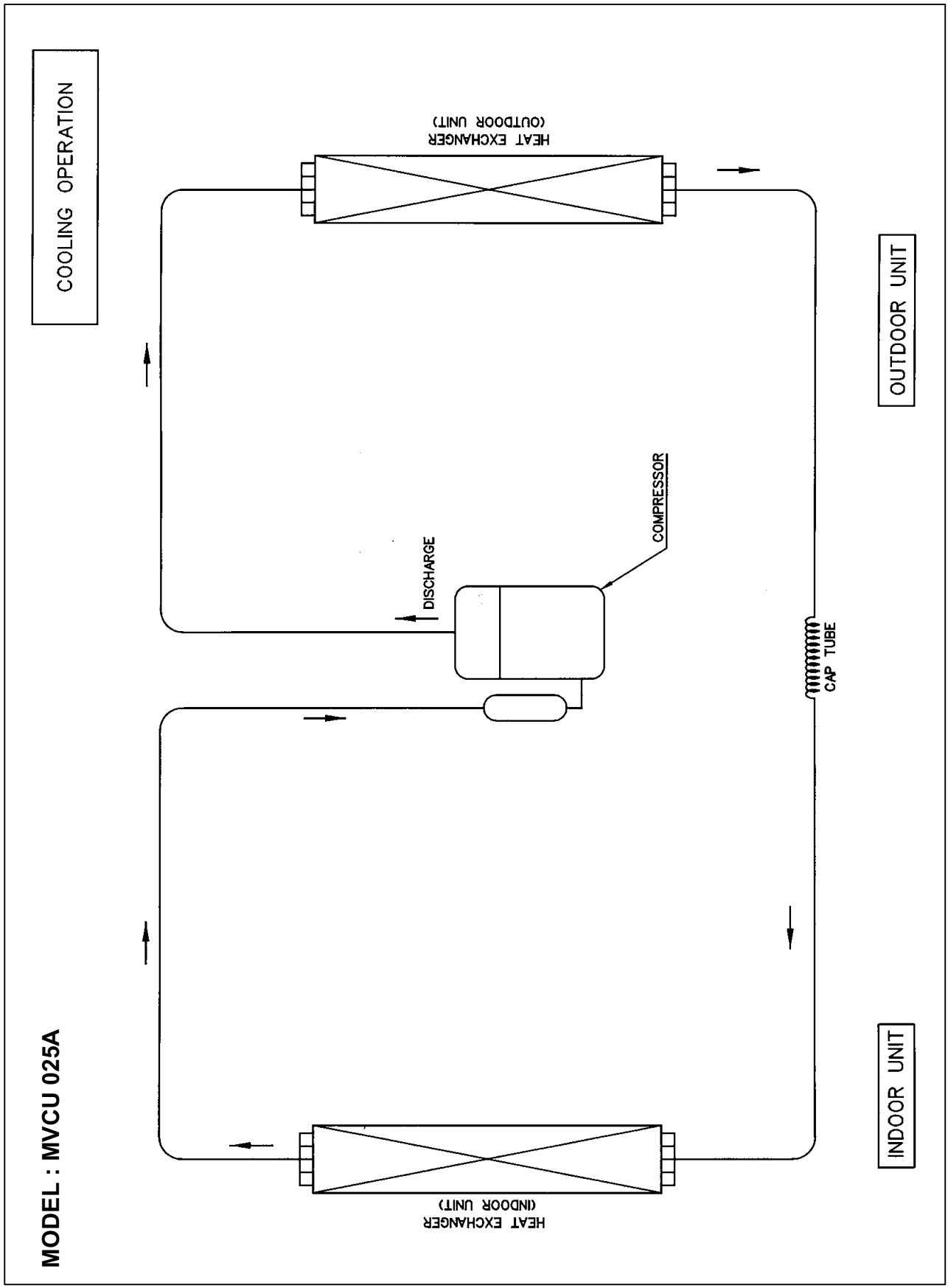
**Cooling**




**⚠ Caution :**

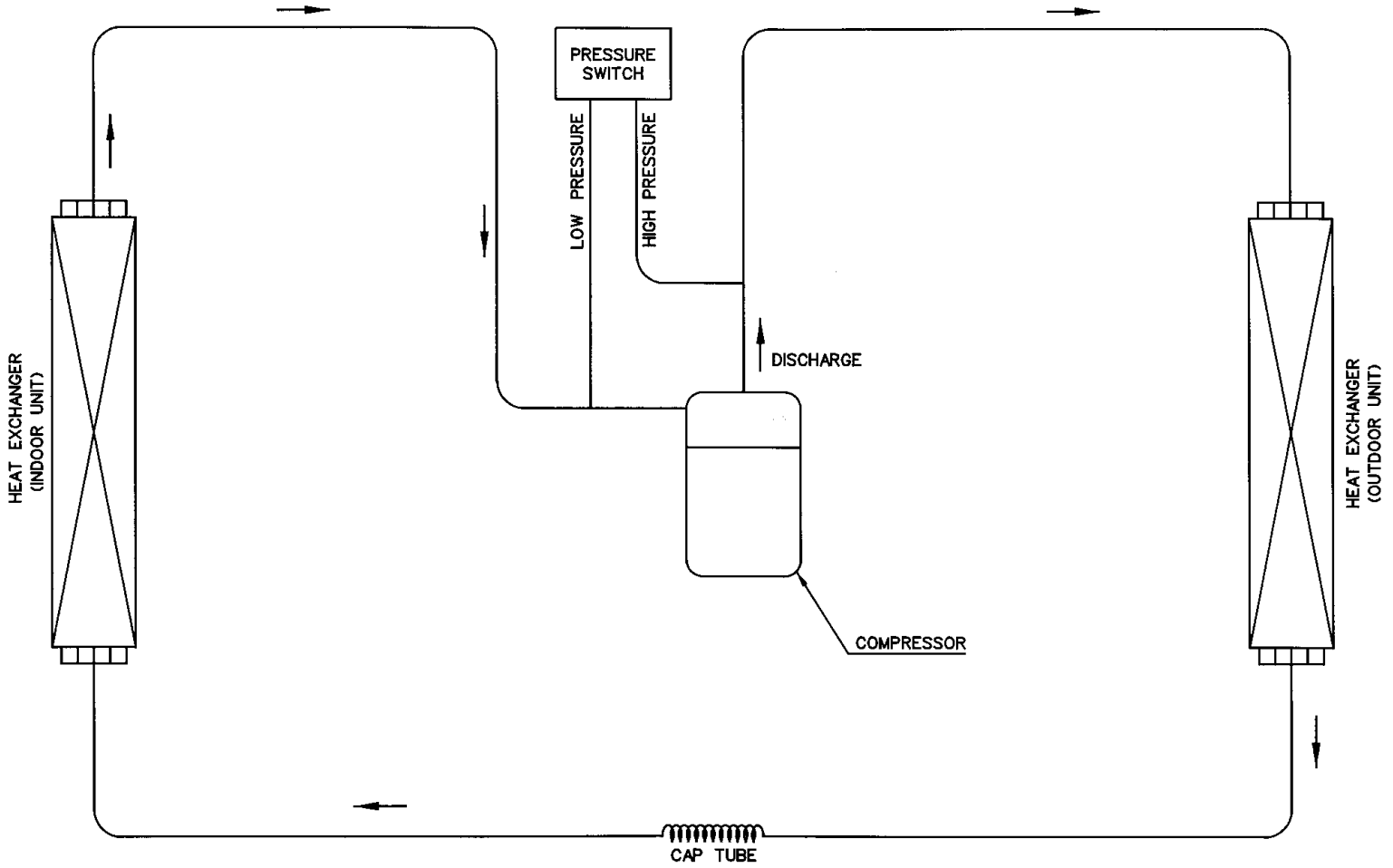
The use of your air conditioner outside the range of working temperature and humidity can result in serious failure.

# Refrigerant Circuit



**MODEL : MVCU 030A/035A/040A/050A/060A**

COOLING OPERATION

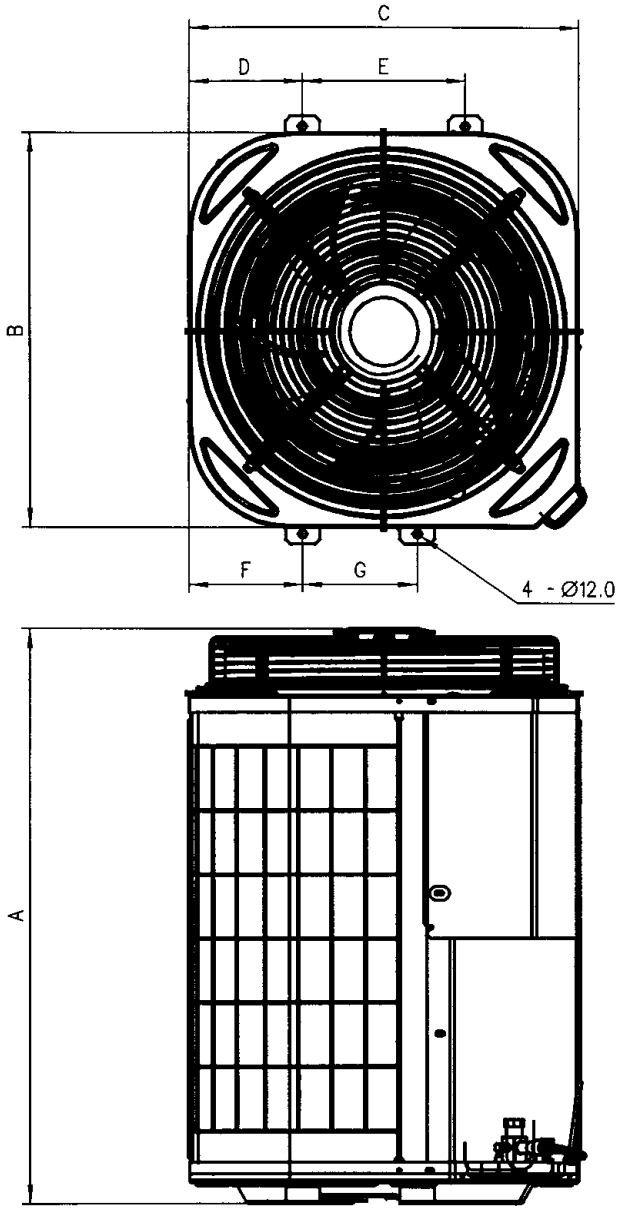



INDOOR UNIT

OUTDOOR UNIT

# Outlines And Dimensions

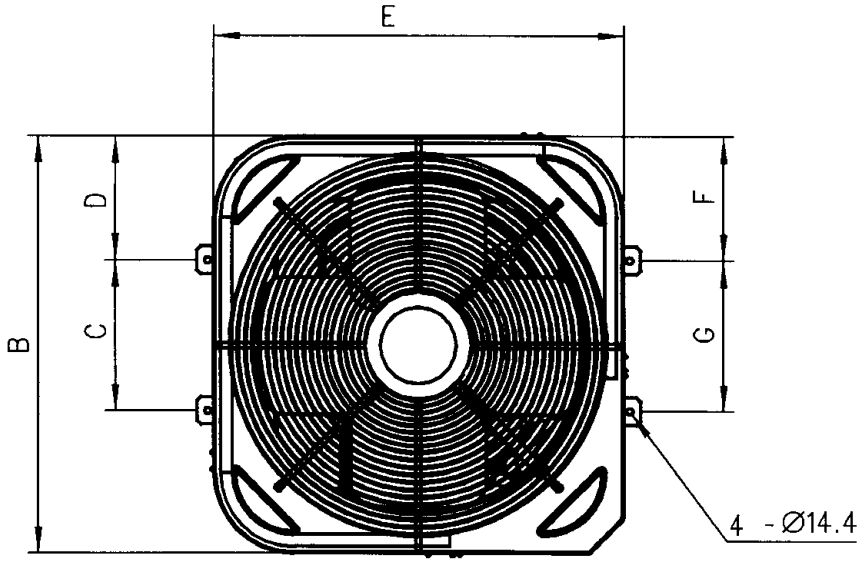
**MODEL : MVCU 025 / 030 / 035A**

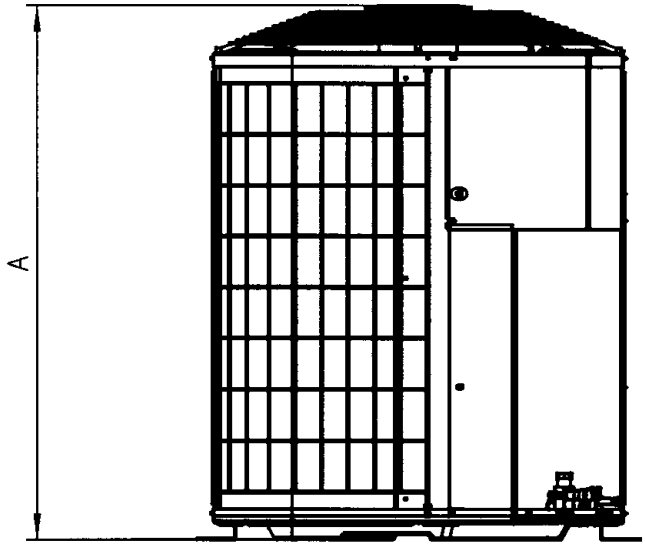



| MODEL | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| MVCU 025 / 030 / 035A | 841 | 572 | 572 | 168 | 236 | 168 | 166 |

All dimensions in mm

**MODEL : MVCU 040 / 050 / 060A**



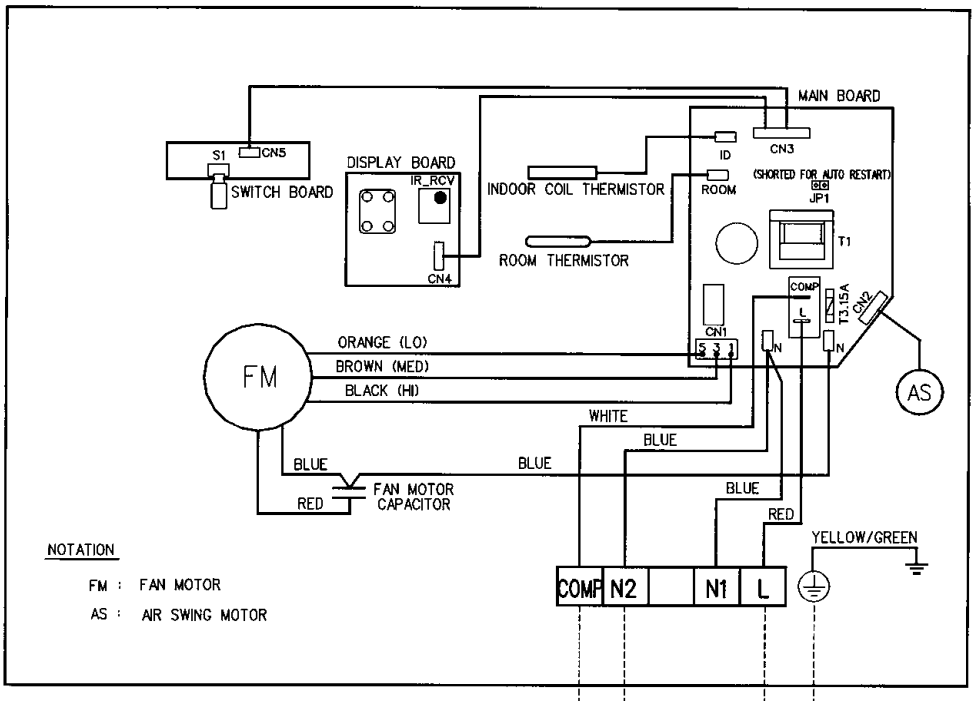

| MODEL | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| MVCU 040A | 984 | 762 | 275 | 225 | 762 | 225 | 275 |
| MVCU 050 / 060A | 1086 | 762 | 275 | 225 | 762 | 225 | 275 |

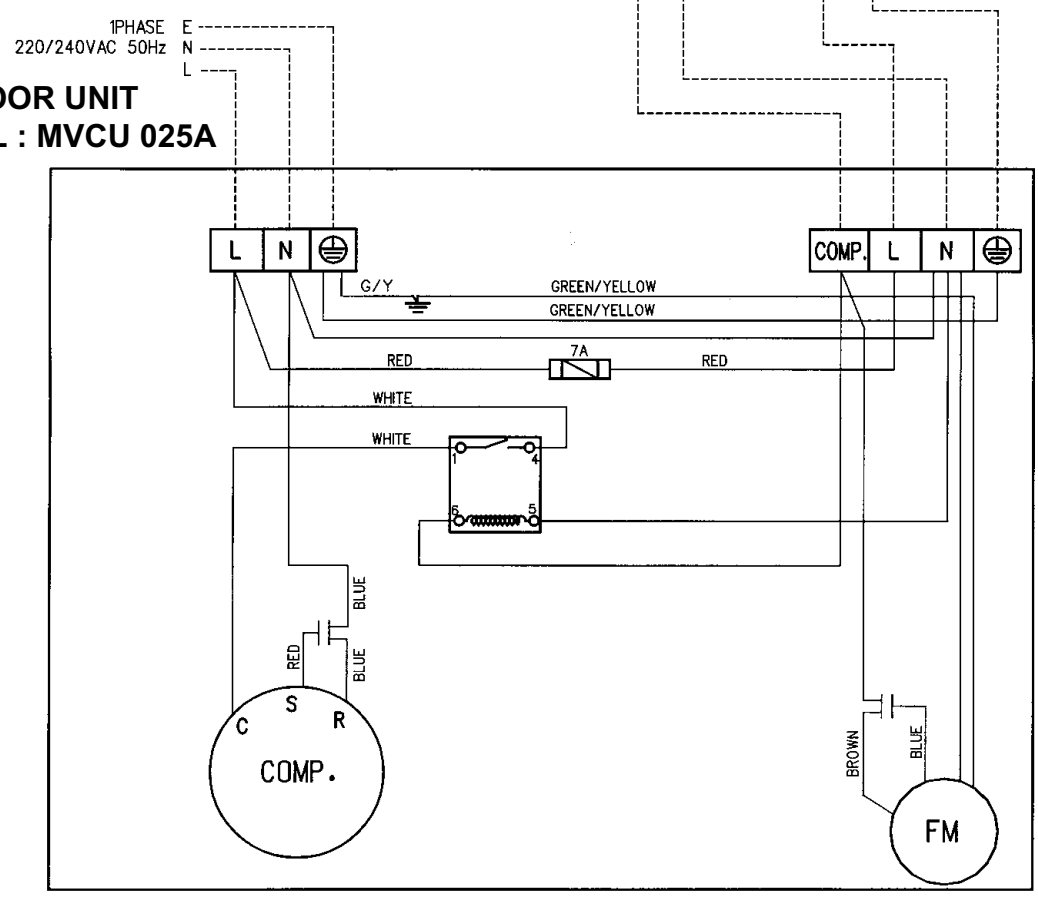
All dimensions in mm

# Wiring Diagrams

## WALL MOUNTED

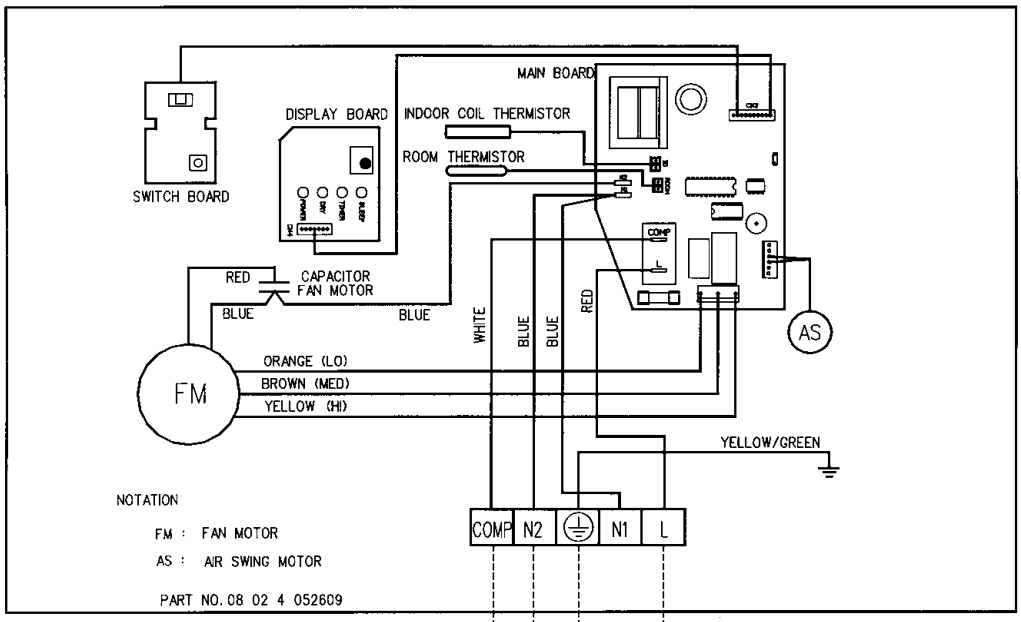
### INDOOR UNIT
### MODEL : MWM 025F



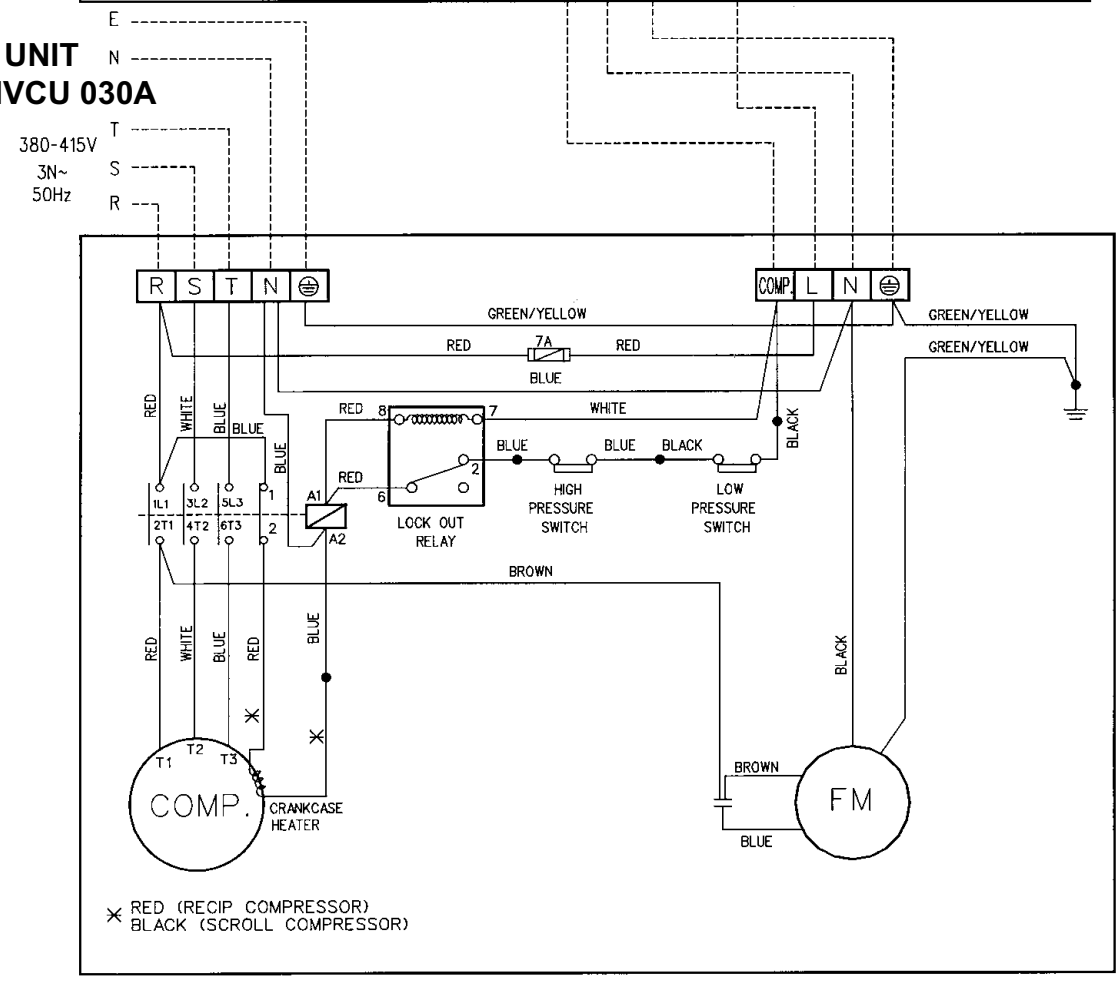




### OUTDOOR UNIT
### MODEL : MVCU 025A

**INDOOR UNIT**
**MODEL : MWM 031F**

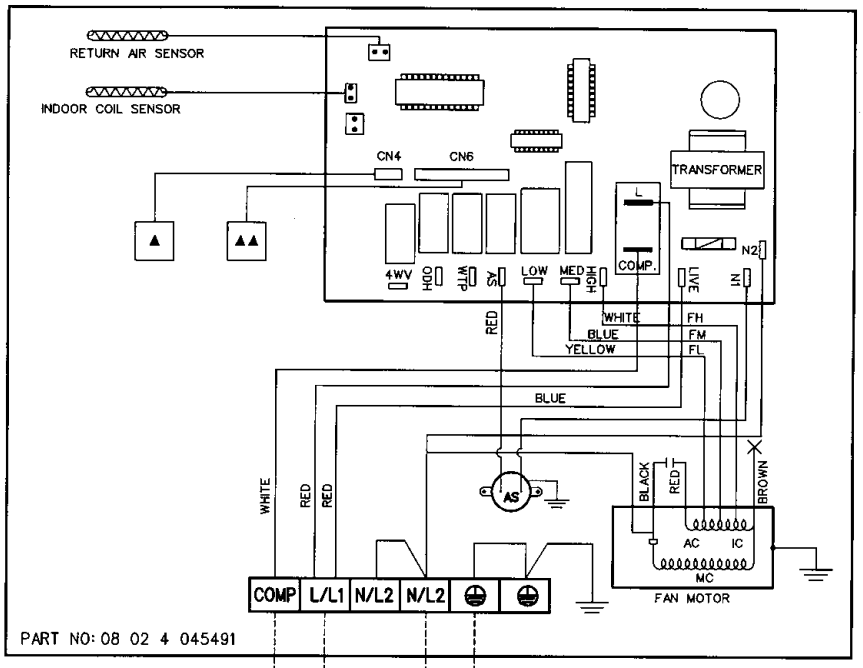



**OUTDOOR UNIT**
**MODEL : MVCU 030A**

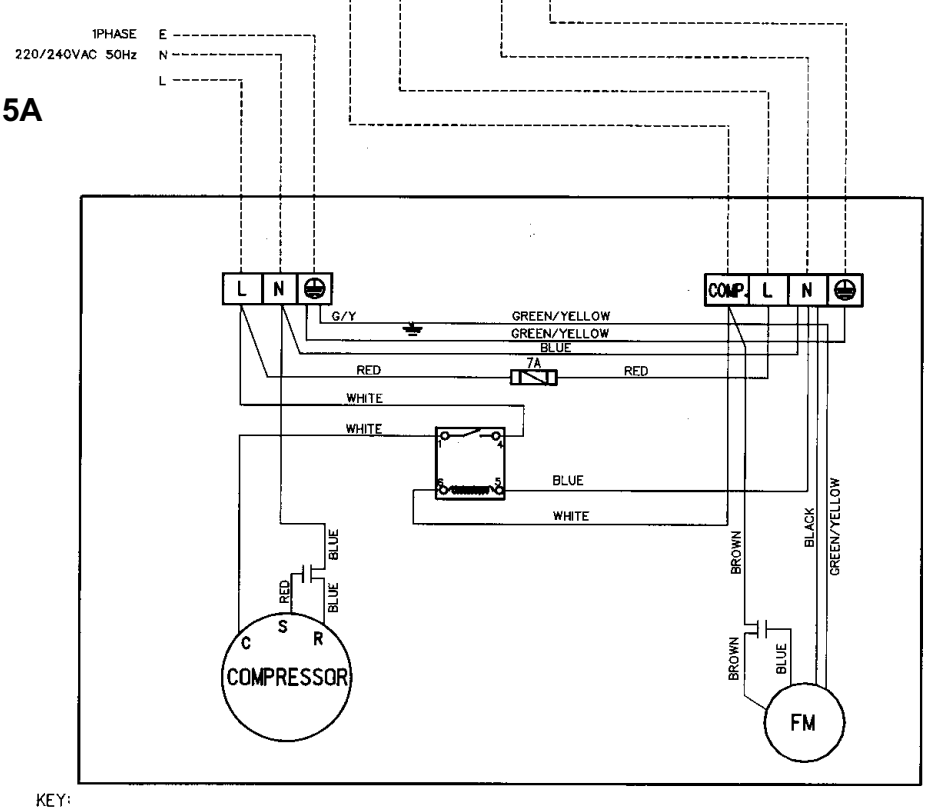


## CEILING CONVERTIBLE

## INDOOR UNIT
## MODEL : MCM 025D




## OUTDOOR UNIT
## MODEL : MVCU 025A




KEY:

CM - COMPRESSOR MOTOR WITH
INTERNAL OVERLOAD PROTECTOR

FM - FAN MOTOR

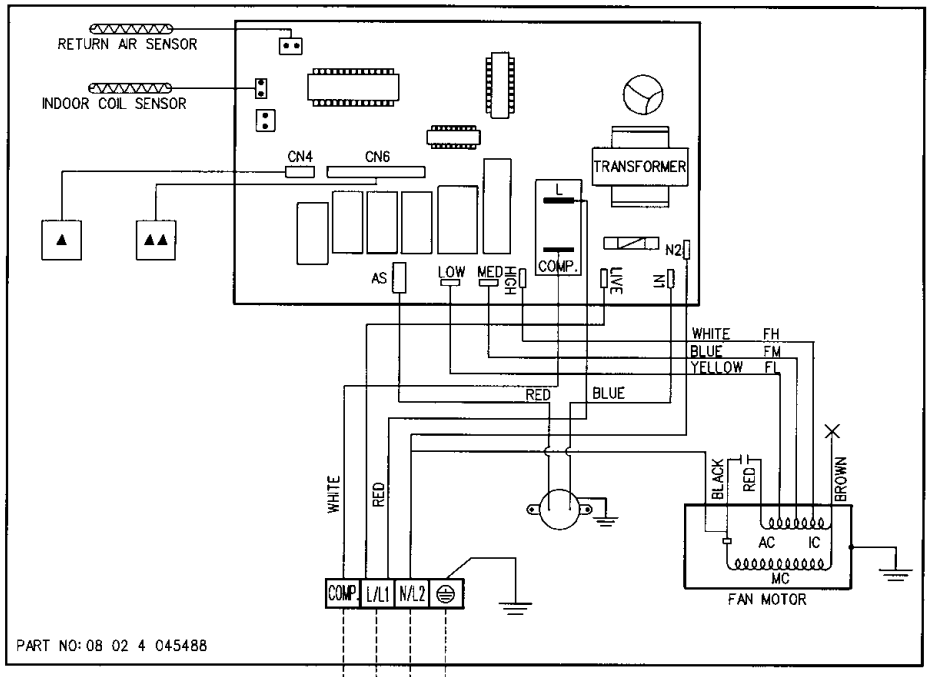
----- - FIELD SUPPLY WIRING

▲ CN4 IS CONNECTED TO WIRED HANDSET

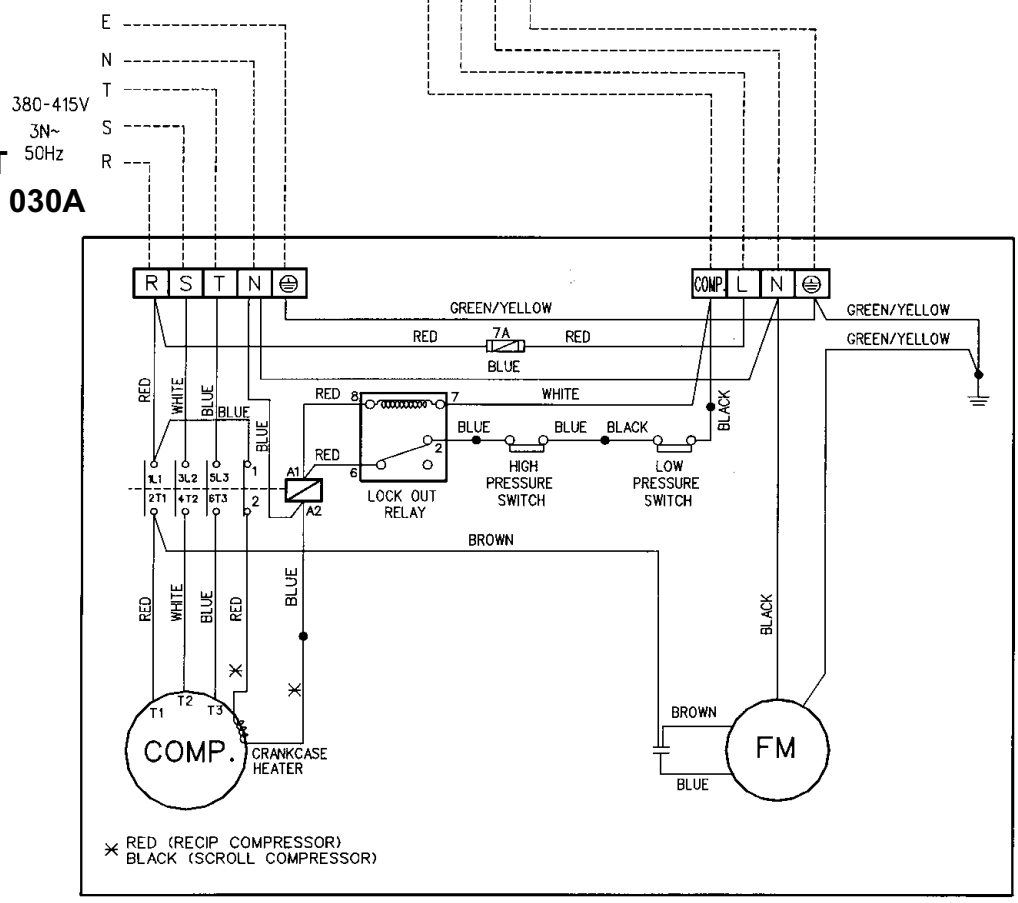
▲▲CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT
OF WIRELESS HANDSET

REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

**INDOOR UNIT**
**MODEL : MCM 030D**




**OUTDOOR UNIT**
**MODEL : MVCU 030A**




KEY:

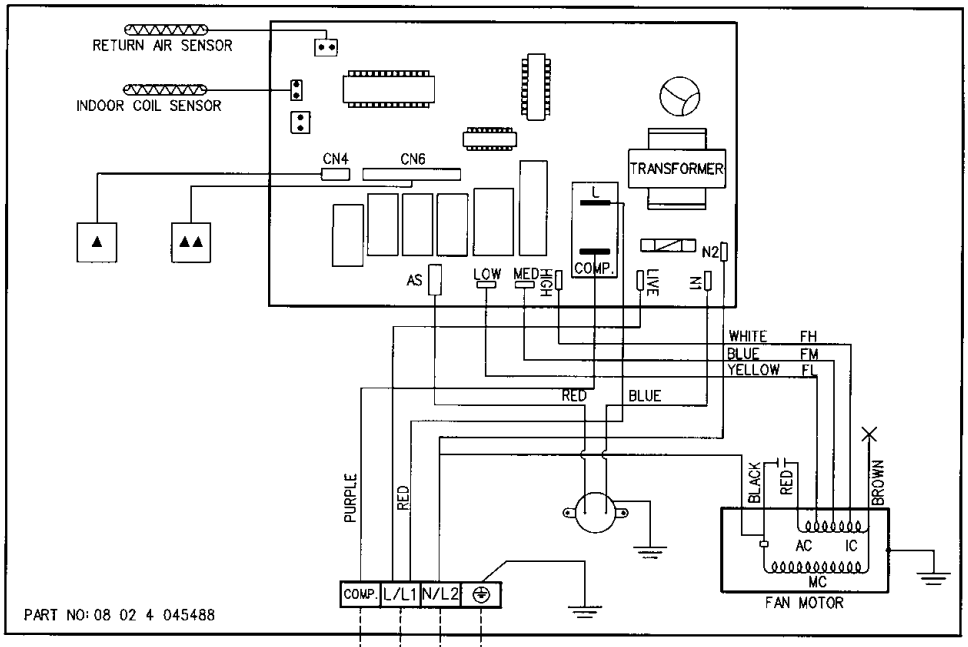
----- - FIELD SUPPLY WIRING

▲ CN4 IS CONNECTED TO WIRED HANDSET

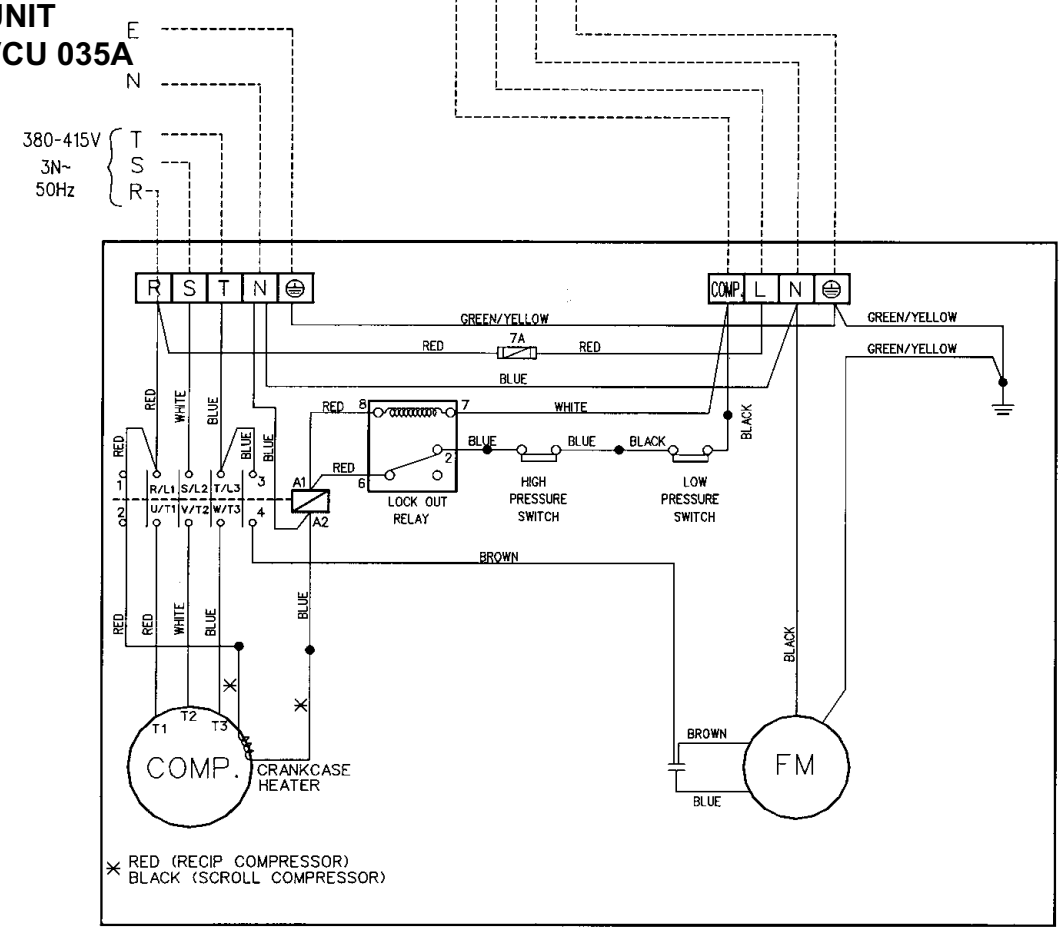
▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

## INDOOR UNIT
## MODEL : MCM 040D



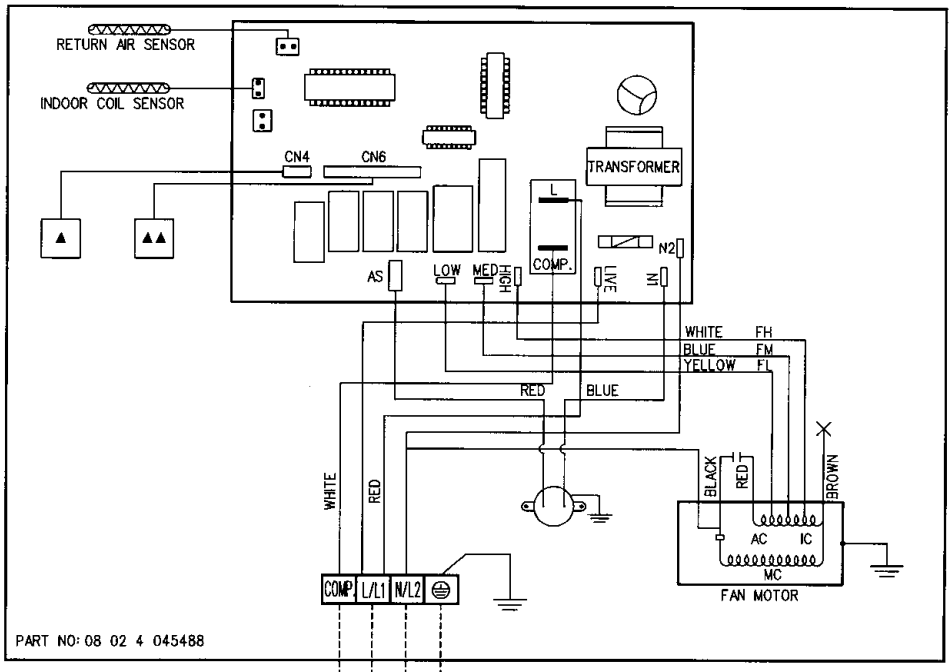

## OUTDOOR UNIT
## MODEL : MVCU 035A



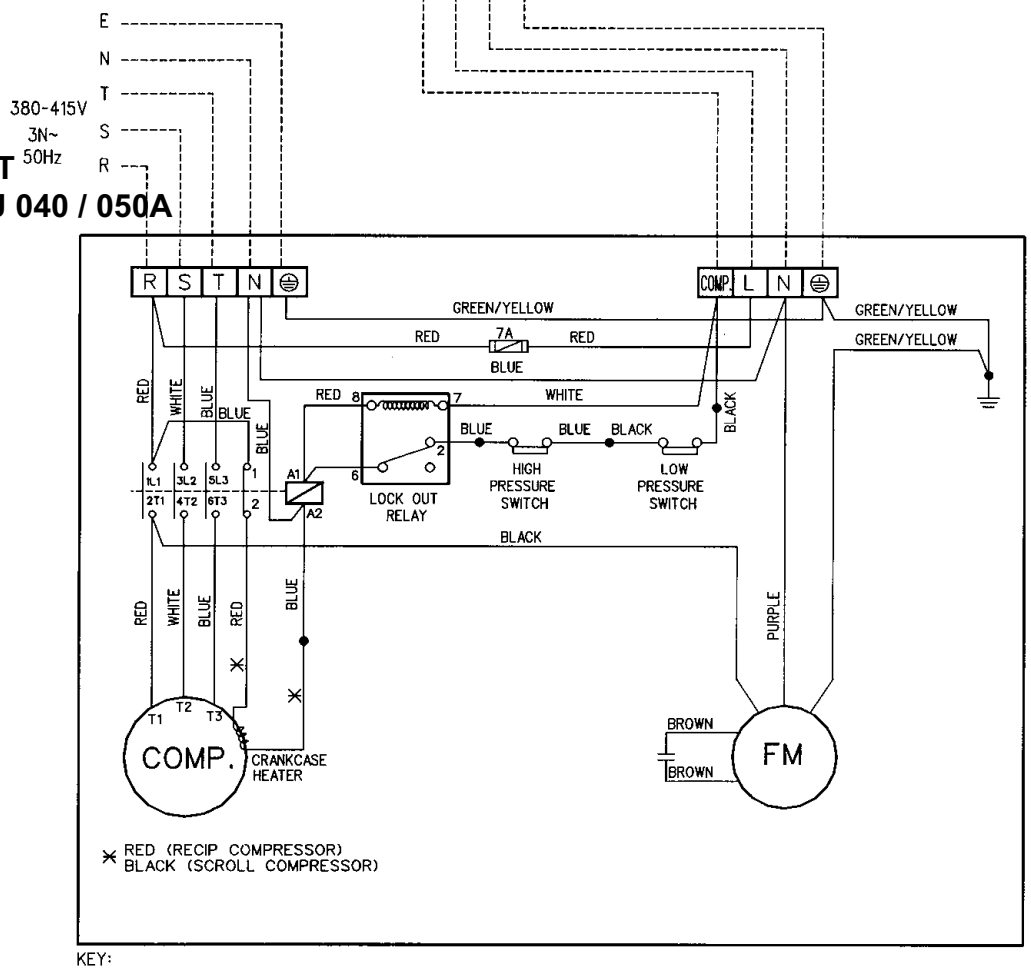

KEY:

CM - COMPRESSOR MOTOR WITH INTERNAL OVERLOAD PROTECTOR
FM - FAN MOTOR
----- - FIELD SUPPLY WIRING
▲ CN4 IS CONNECTED TO WIRED HANDSET
▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET
REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

## INDOOR UNIT
## MODEL : MCM 040 / 050D




## OUTDOOR UNIT
## MODEL : MVCU 040 / 050A




KEY:

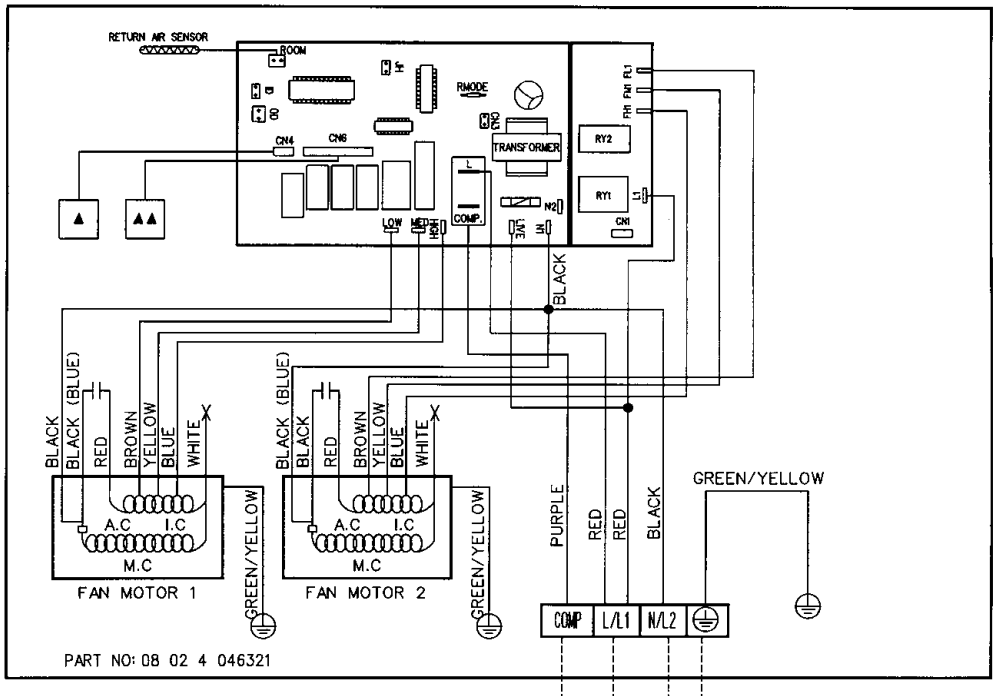
----- - FIELD SUPPLY WIRING

▲ CN4 IS CONNECTED TO WIRED HANDSET

▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

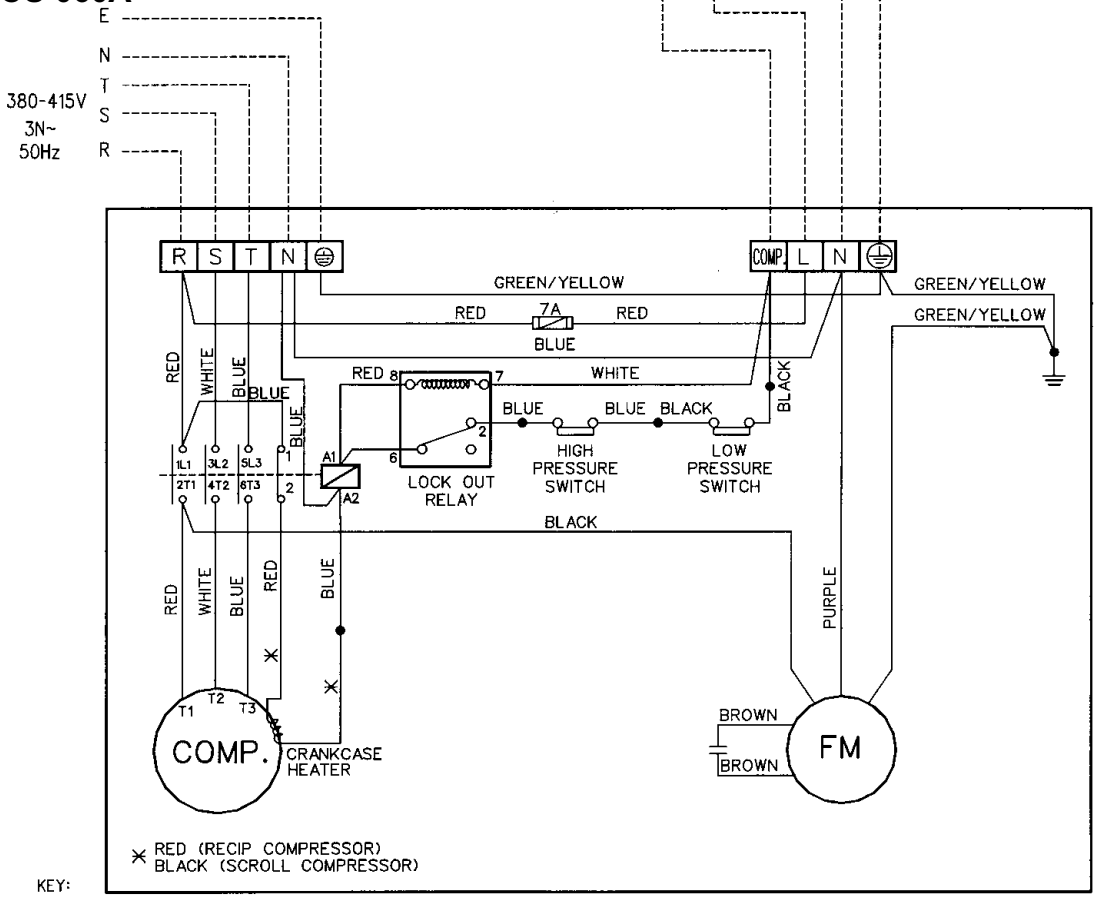
REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

**INDOOR UNIT**
**MODEL : MCM 062C**




KEY:
------- - FIELD SUPPLY WIRING

**OUTDOOR UNIT**
**MODEL : MVCU 060A**




KEY:

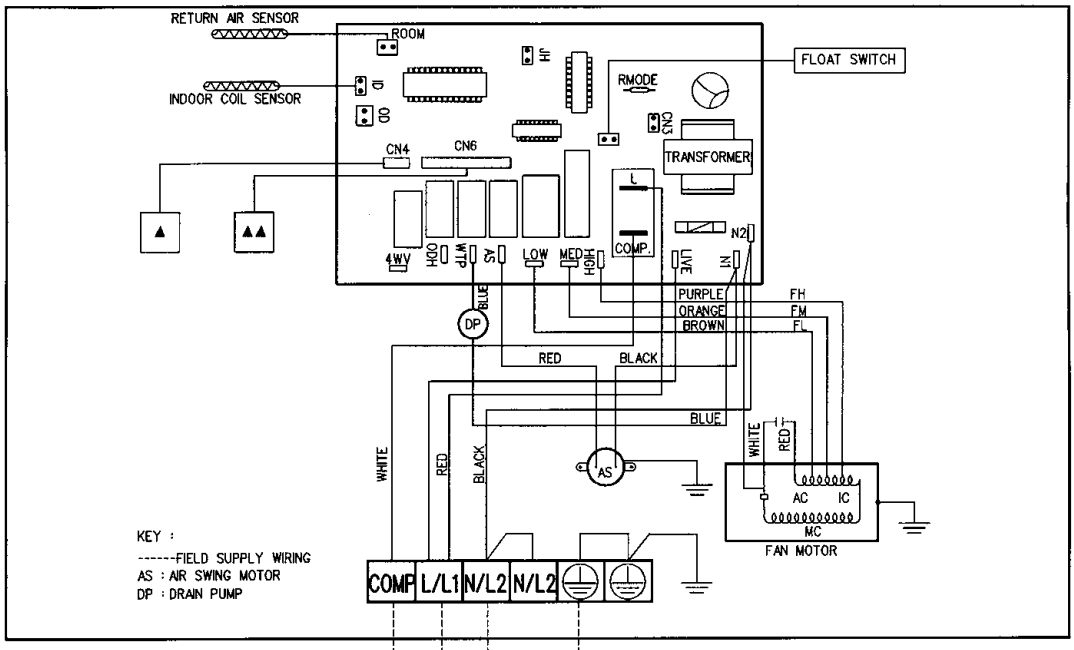
▲ CN4 IS CONNECTED TO WIRED HANDSET

▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

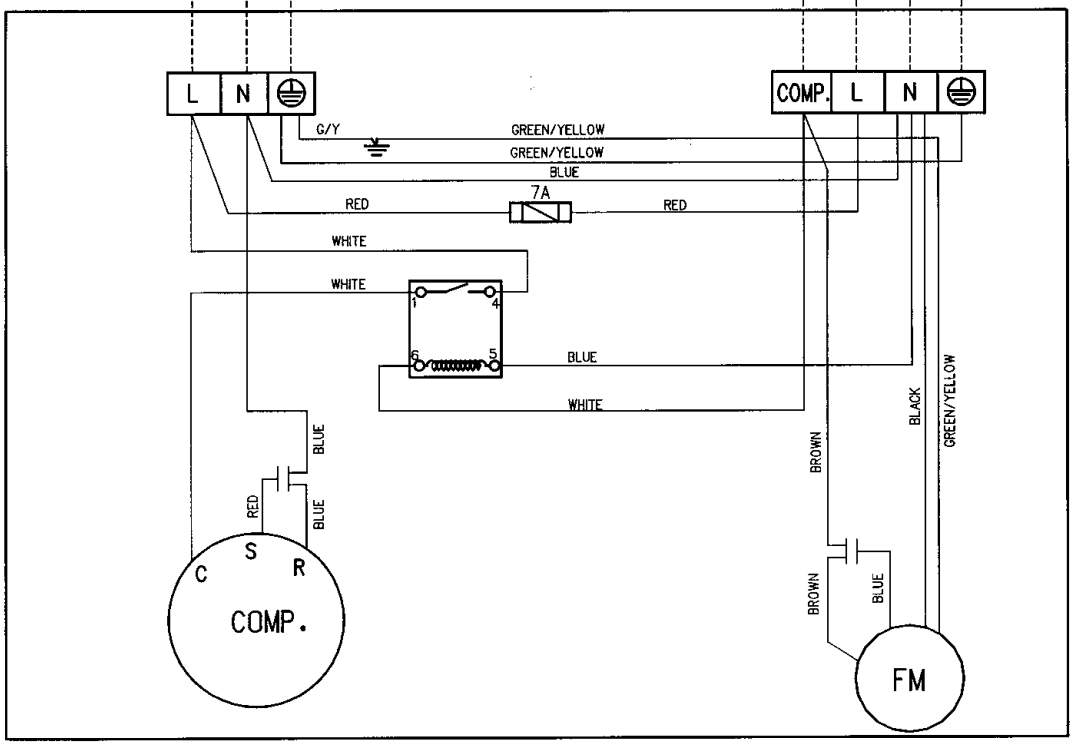
## CEILING CASSETTE A SERIES

## INDOOR UNIT
## MODEL : MCK 025A




1PHASE E
220/240VAC 50Hz N
L

## OUTDOOR UNIT
## MODEL : MVCU 025A




KEY:

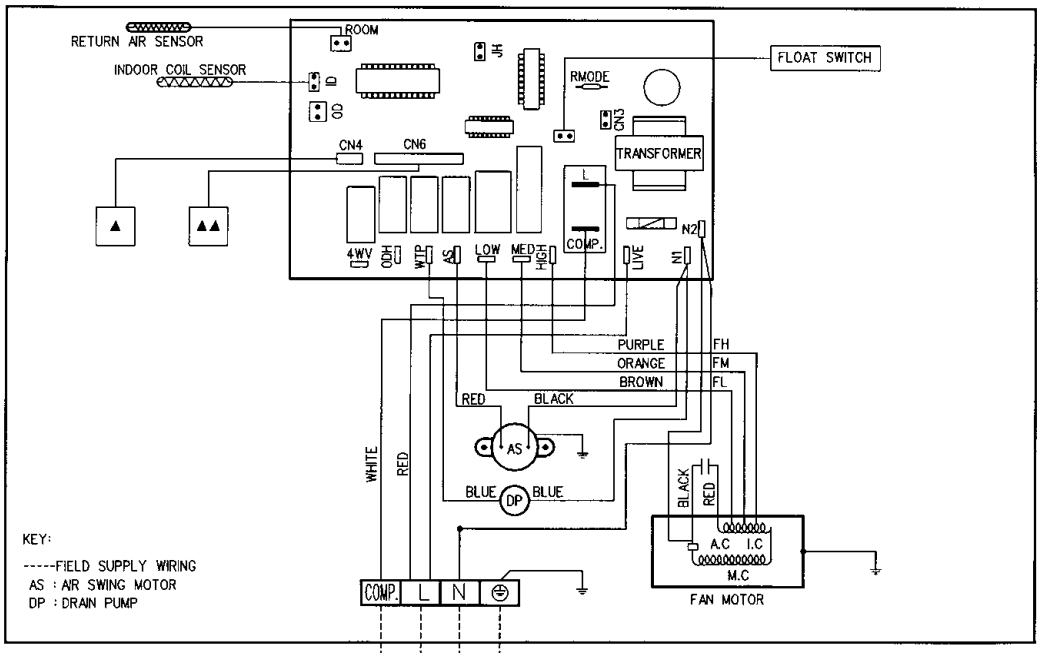
----- - FIELD SUPPLY WIRING

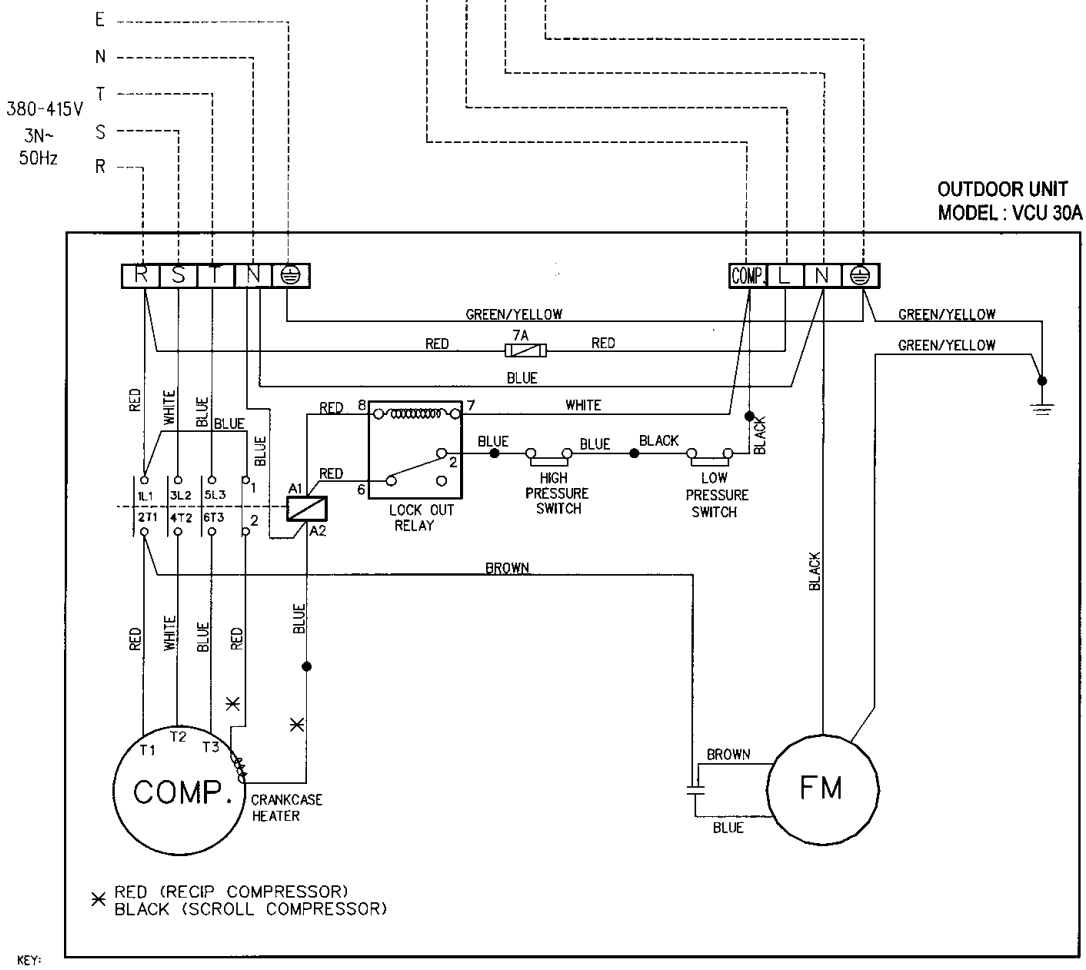
▲ CN4 IS CONNECTED TO WIRED HANDSET

▲▲CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

## INDOOR UNIT
## MODEL : MCK 030A




KEY:

----- - FIELD SUPPLY WIRING

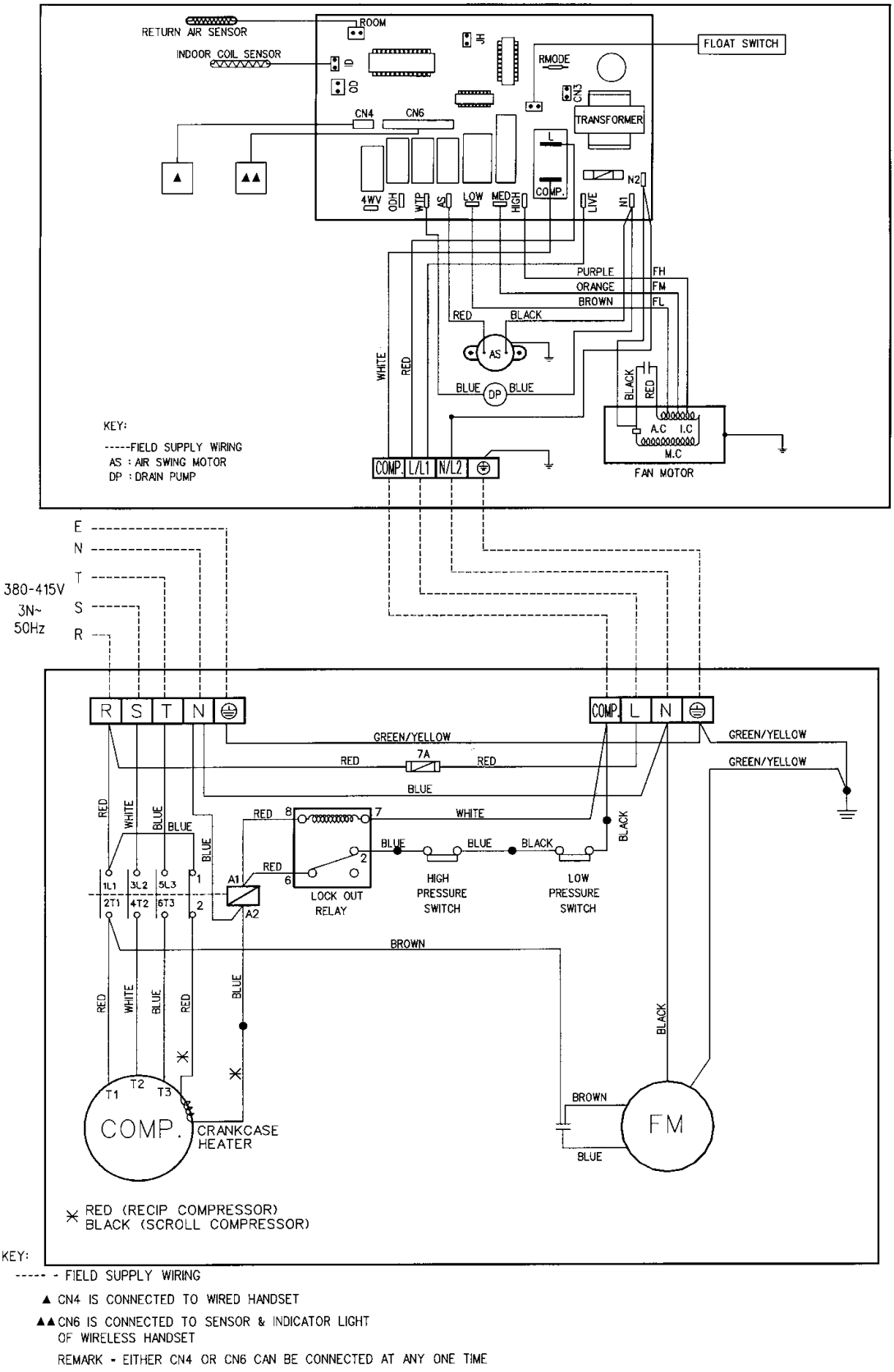
▲ CN4 IS CONNECTED TO WIRED HANDSET

▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

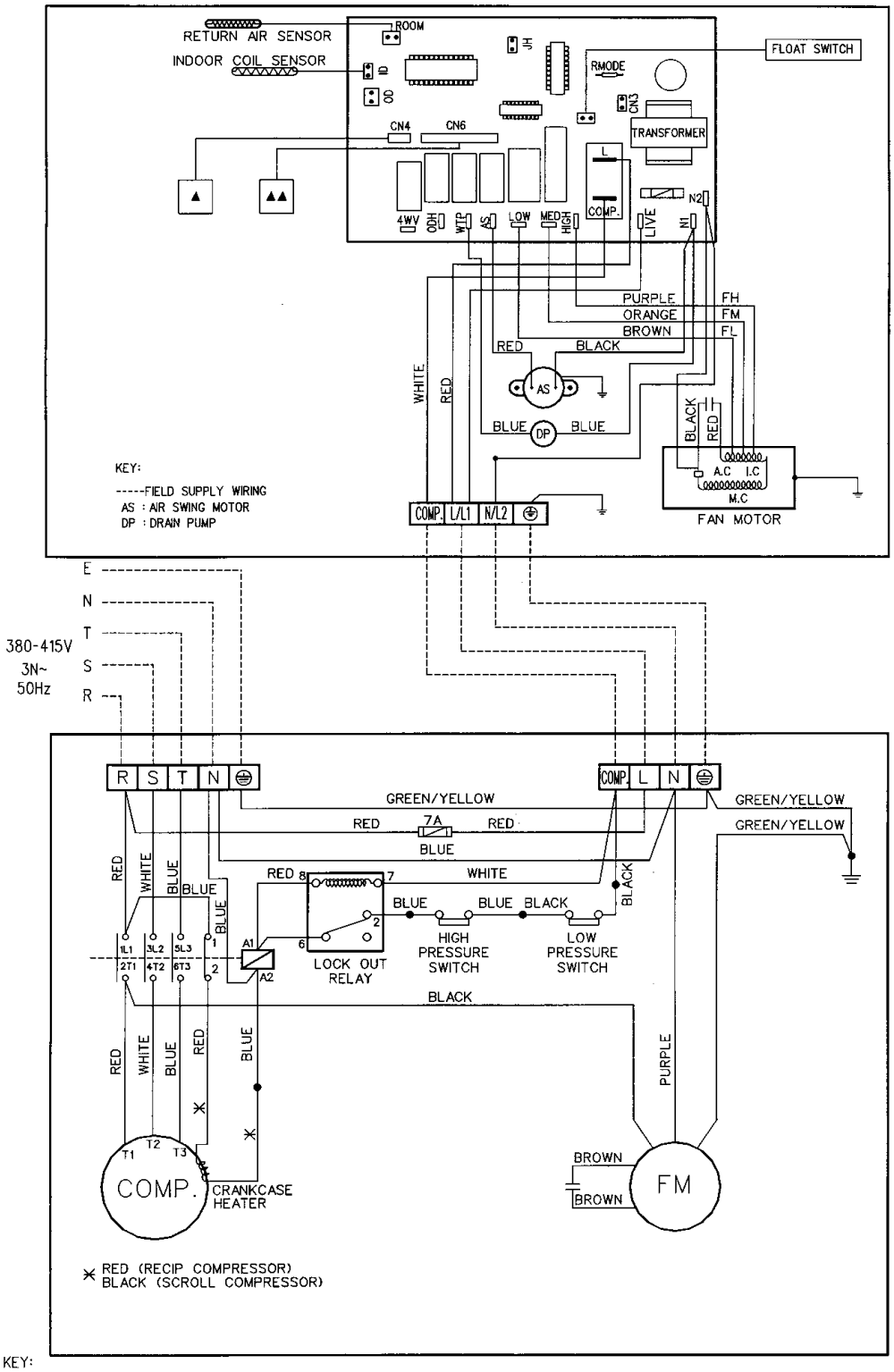
## OUTDOOR UNIT
## MODEL : MVCU 030A

## INDOOR UNIT
## MODEL : MCK 040A




## OUTDOOR UNIT
## MODEL : MVCU 035A

## INDOOR UNIT
## MODEL : MCK 040 / 050A




KEY:

----- - FIELD SUPPLY WIRING

▲ CN4 IS CONNECTED TO WIRED HANDSET

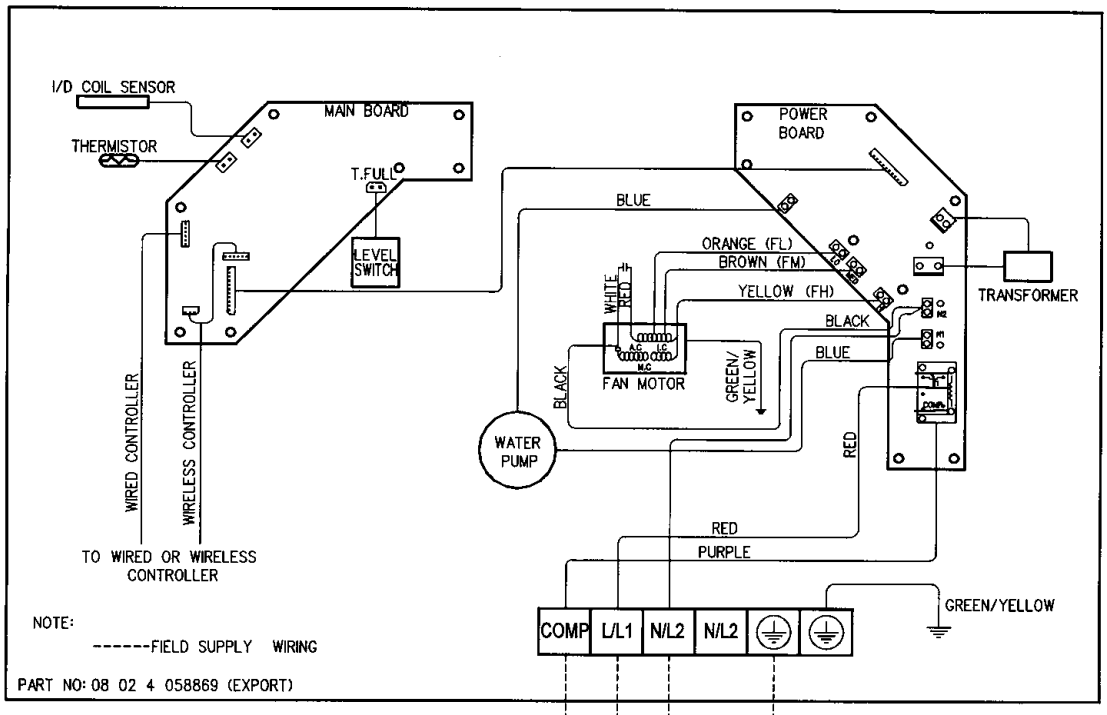
▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

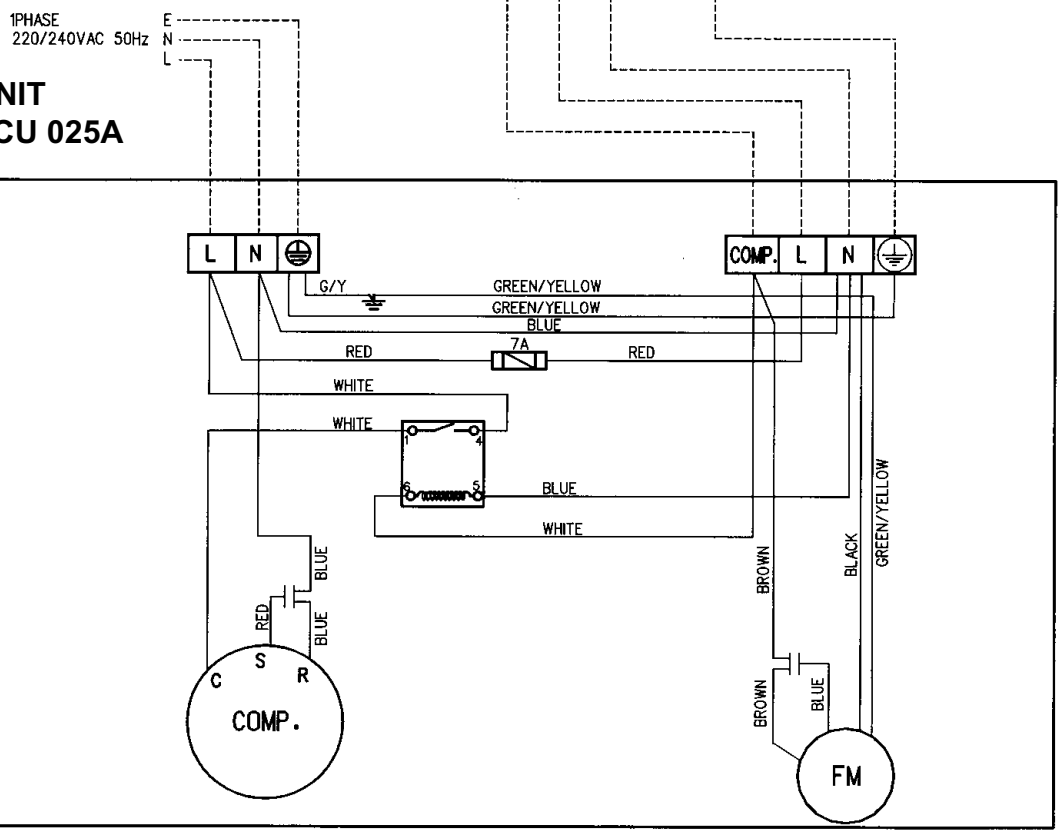
REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

## OUTDOOR UNIT
## MODEL : MVCU 040 / 050A

## CEILING CASSETTE B SERIES

## INDOOR UNIT
## MODEL : MCK 025B




## OUTDOOR UNIT
## MODEL : MVCU 025A

KEY:

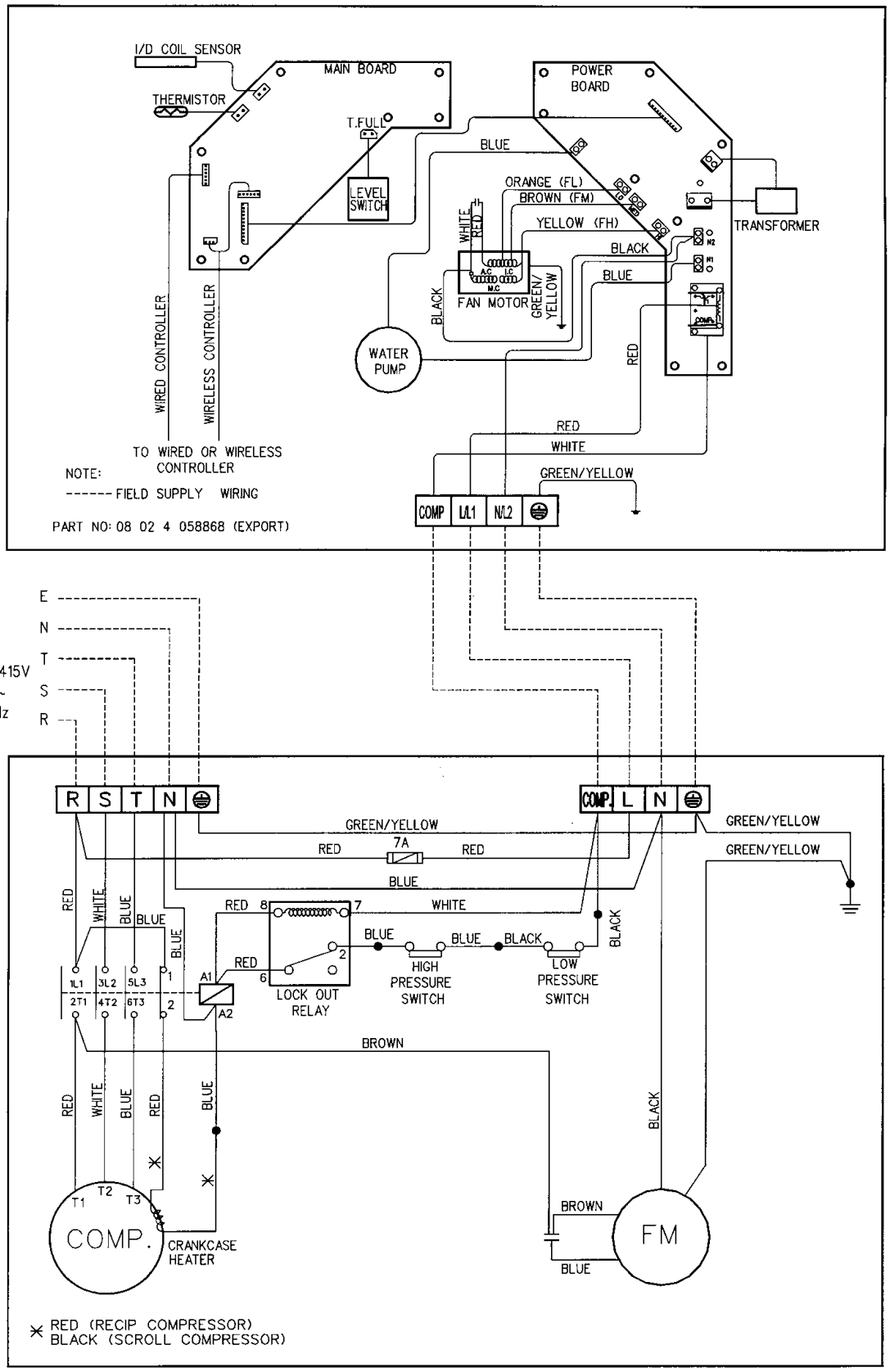
----- - FIELD SUPPLY WIRING

▲ CN4 IS CONNECTED TO WIRED HANDSET

▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

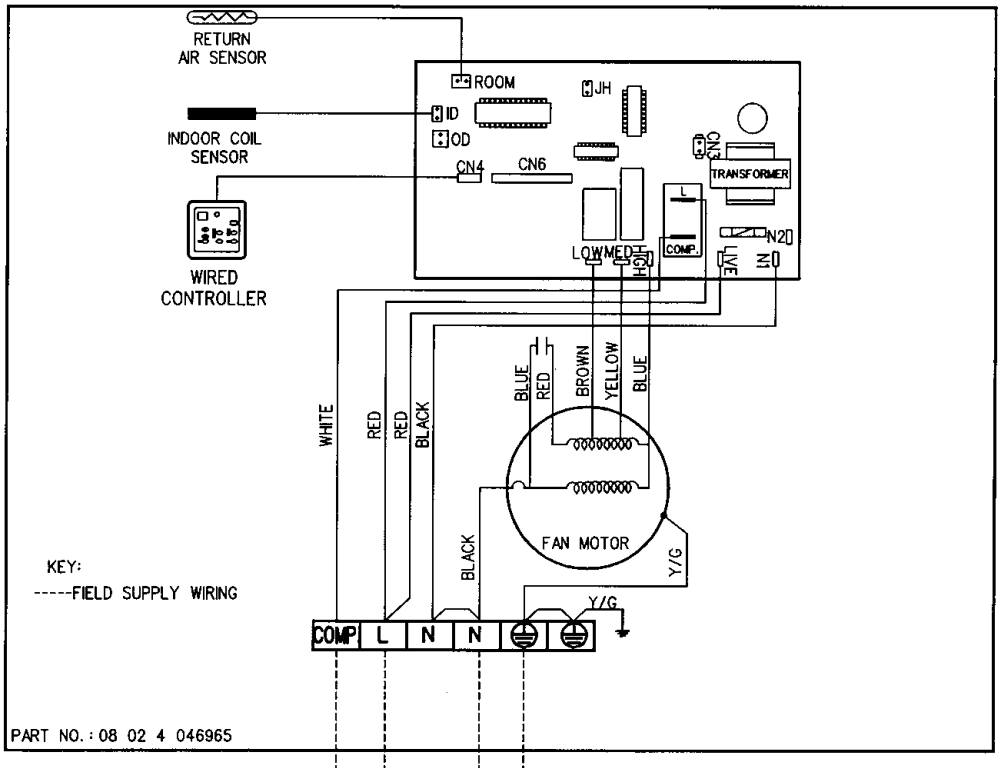
**INDOOR UNIT**
**MODEL : MCK 030B**



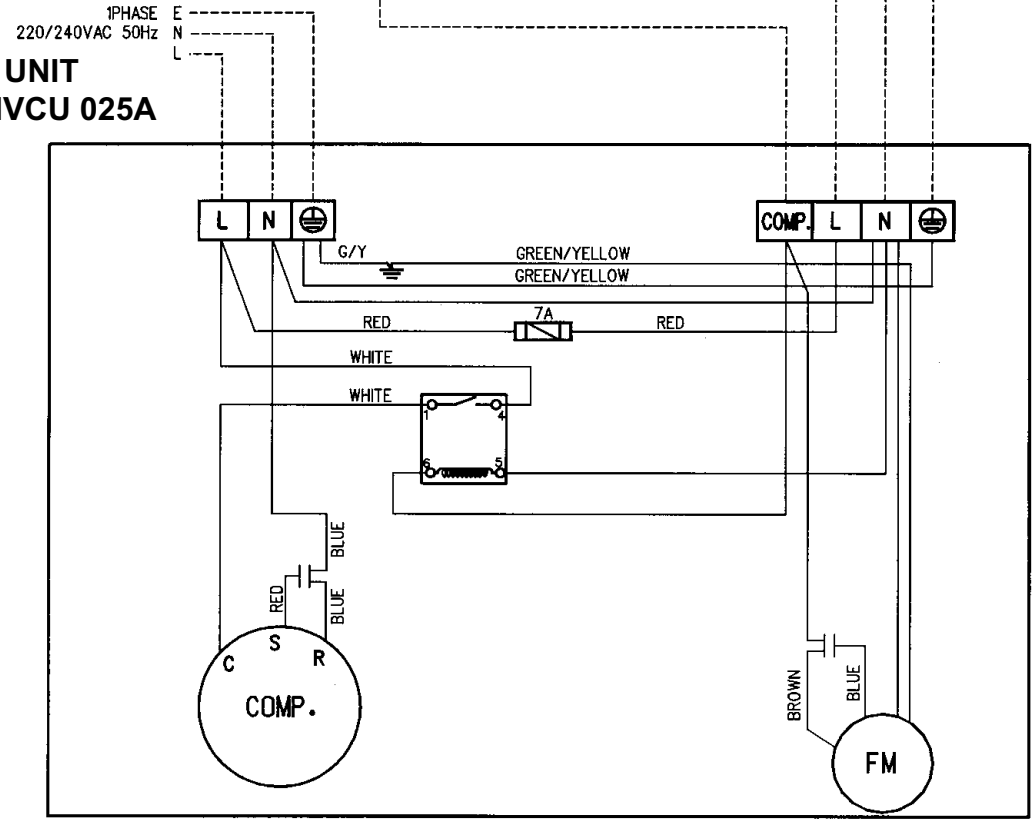

**OUTDOOR UNIT**
**MODEL : MVCU 030A**

**CEILING CONCEALED**

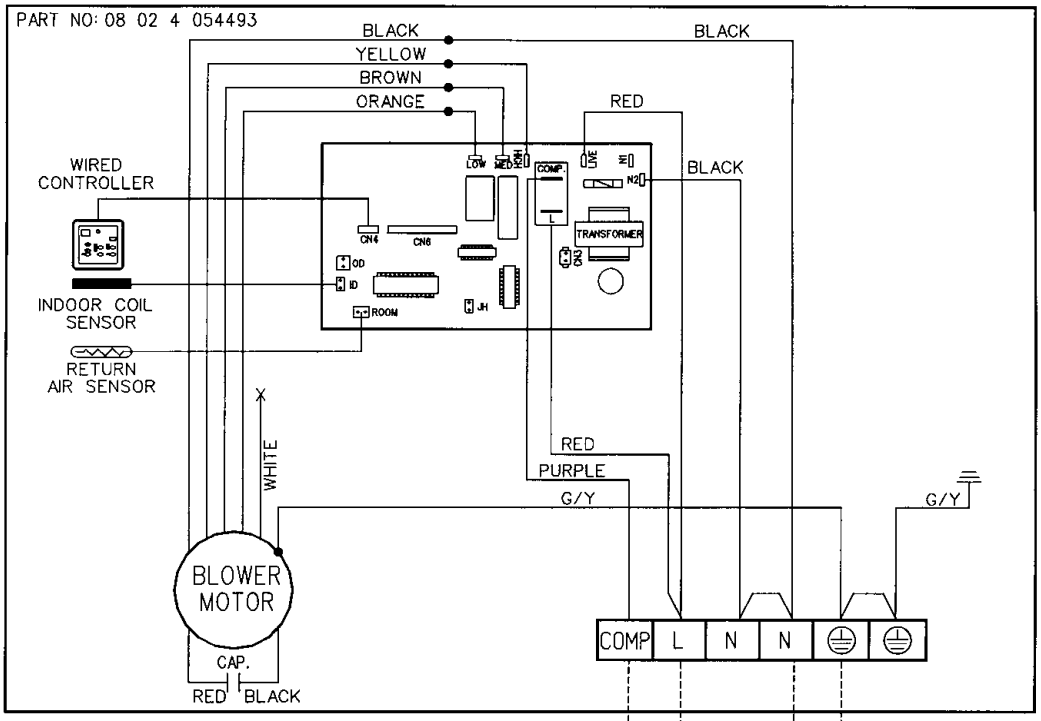
**INDOOR UNIT**
**MODEL : MCC 025C**



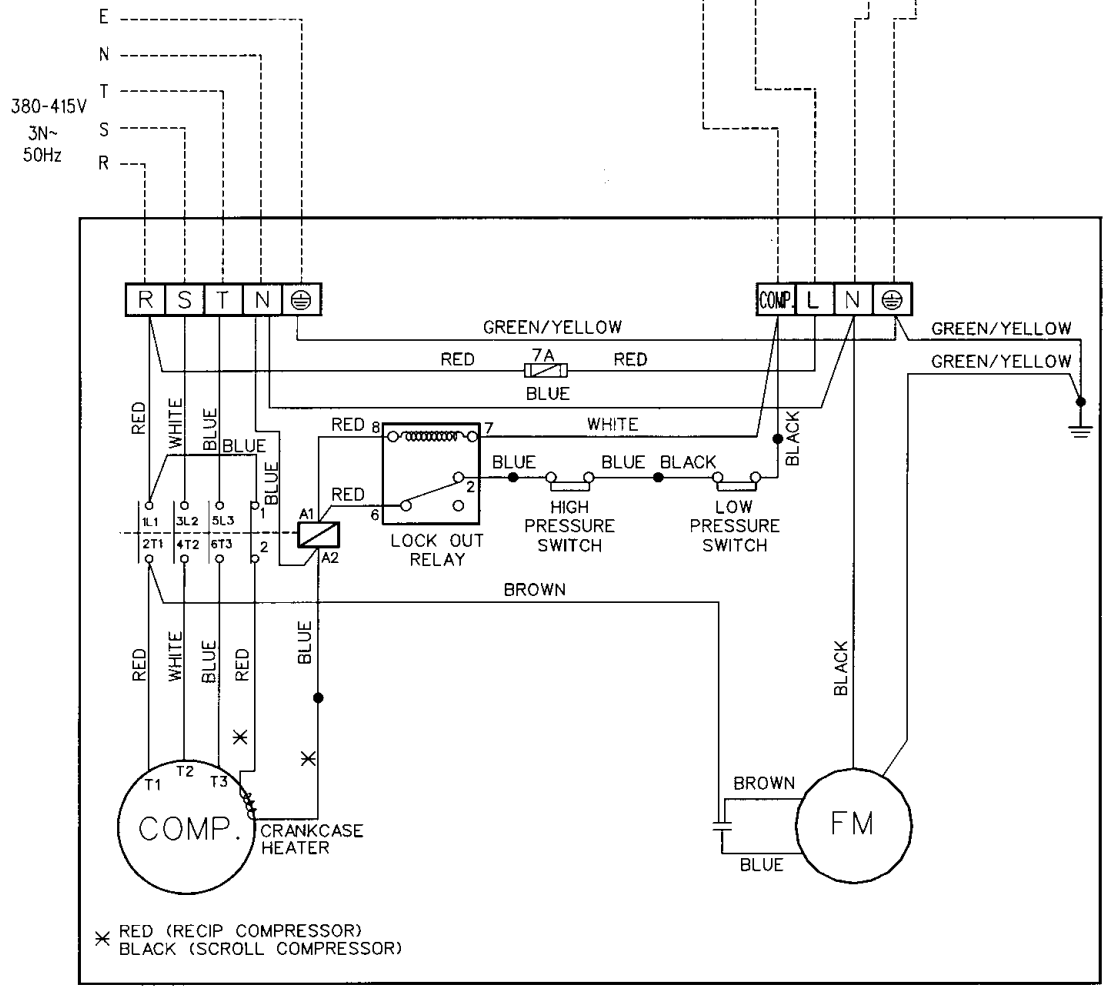

**OUTDOOR UNIT**
**MODEL : MVCU 025A**



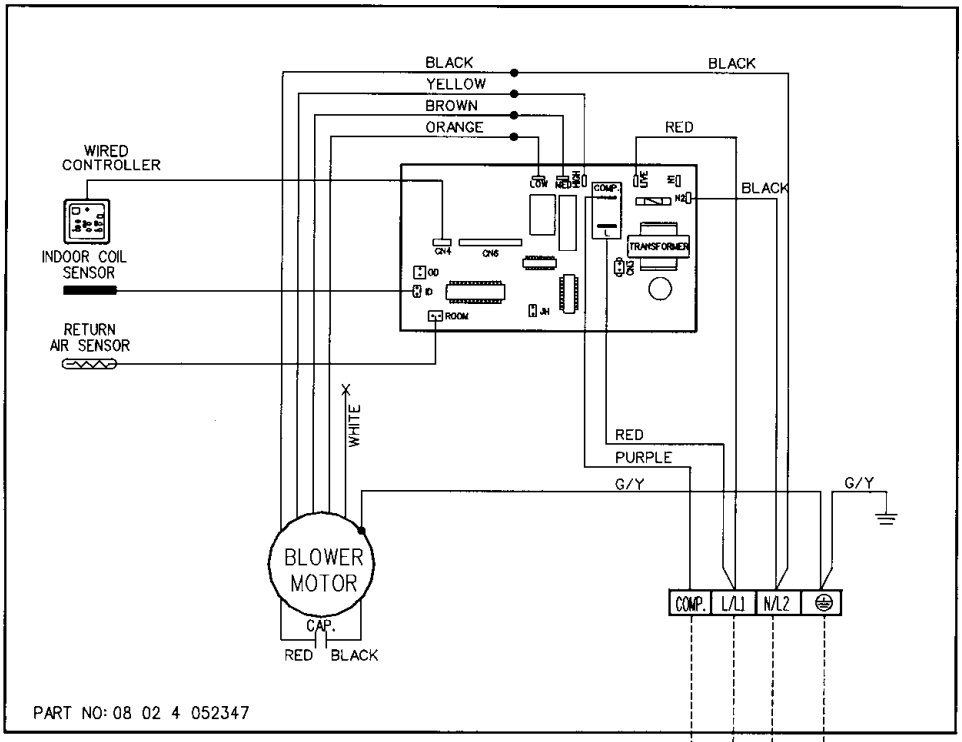
**INDOOR UNIT**
**MODEL : MCC 030C**



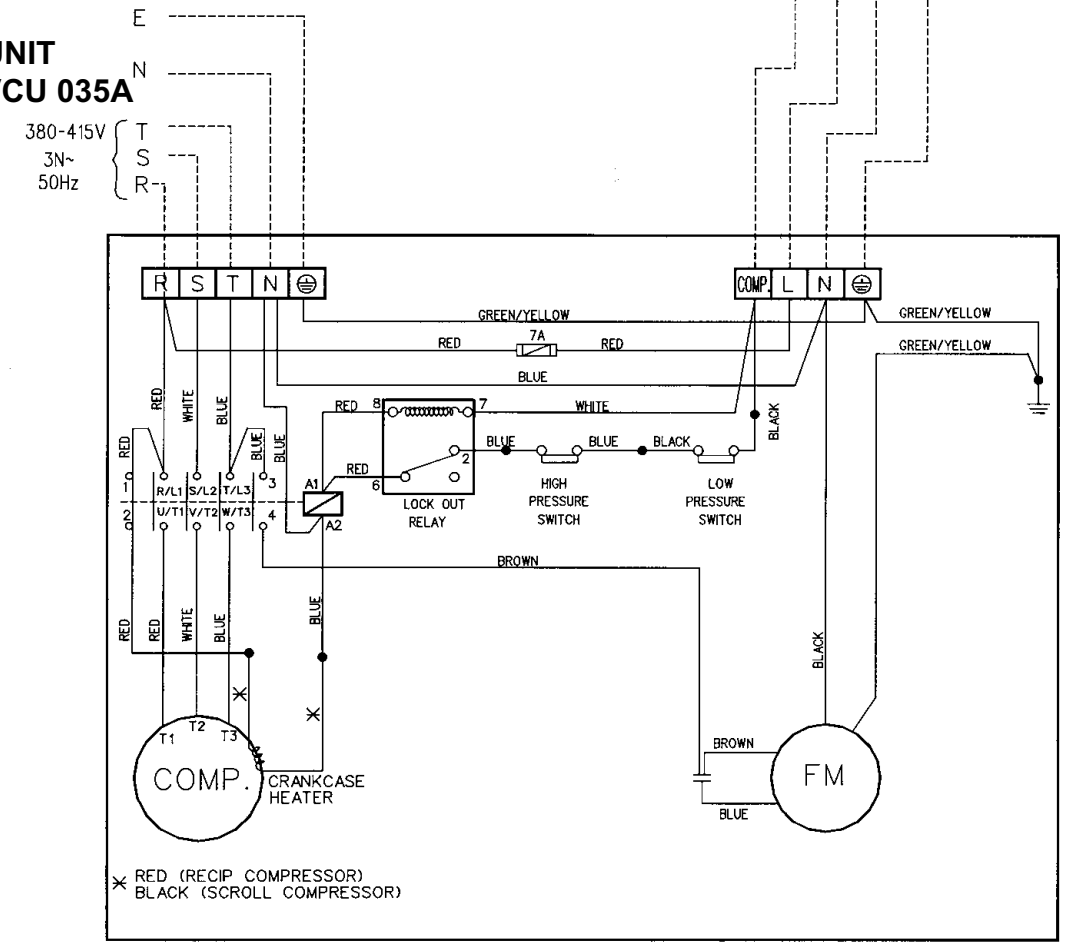

**OUTDOOR UNIT**
**MODEL : MVCU 030A**



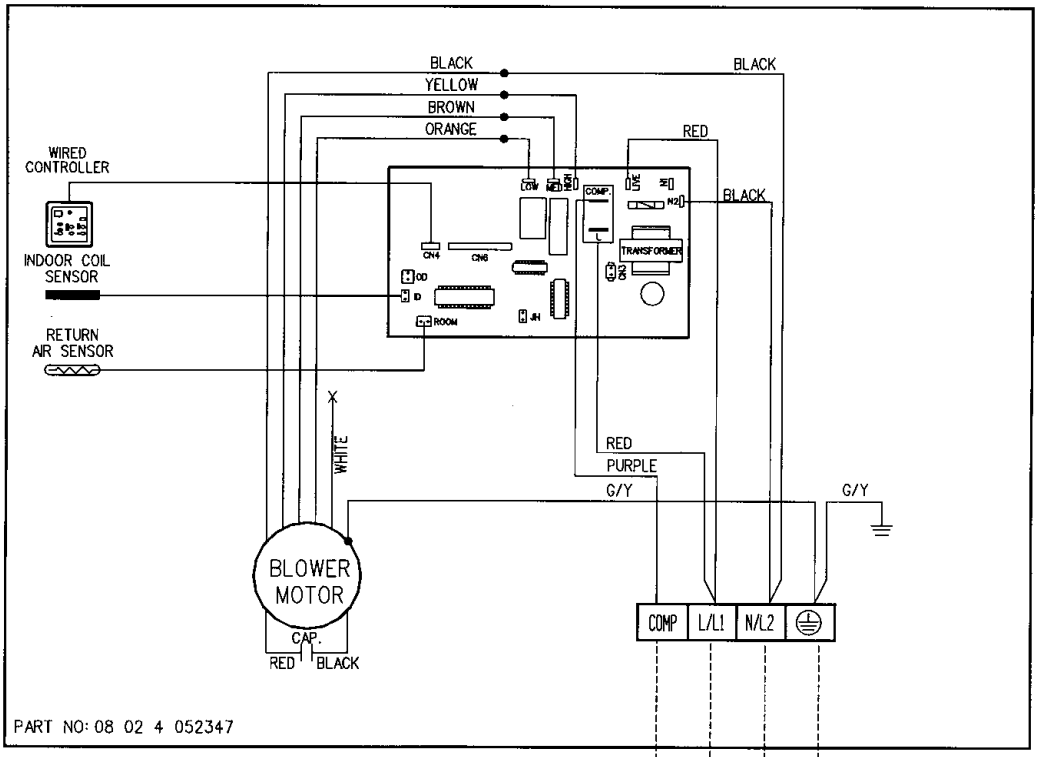
**INDOOR UNIT**
**MODEL : MCC 040C**

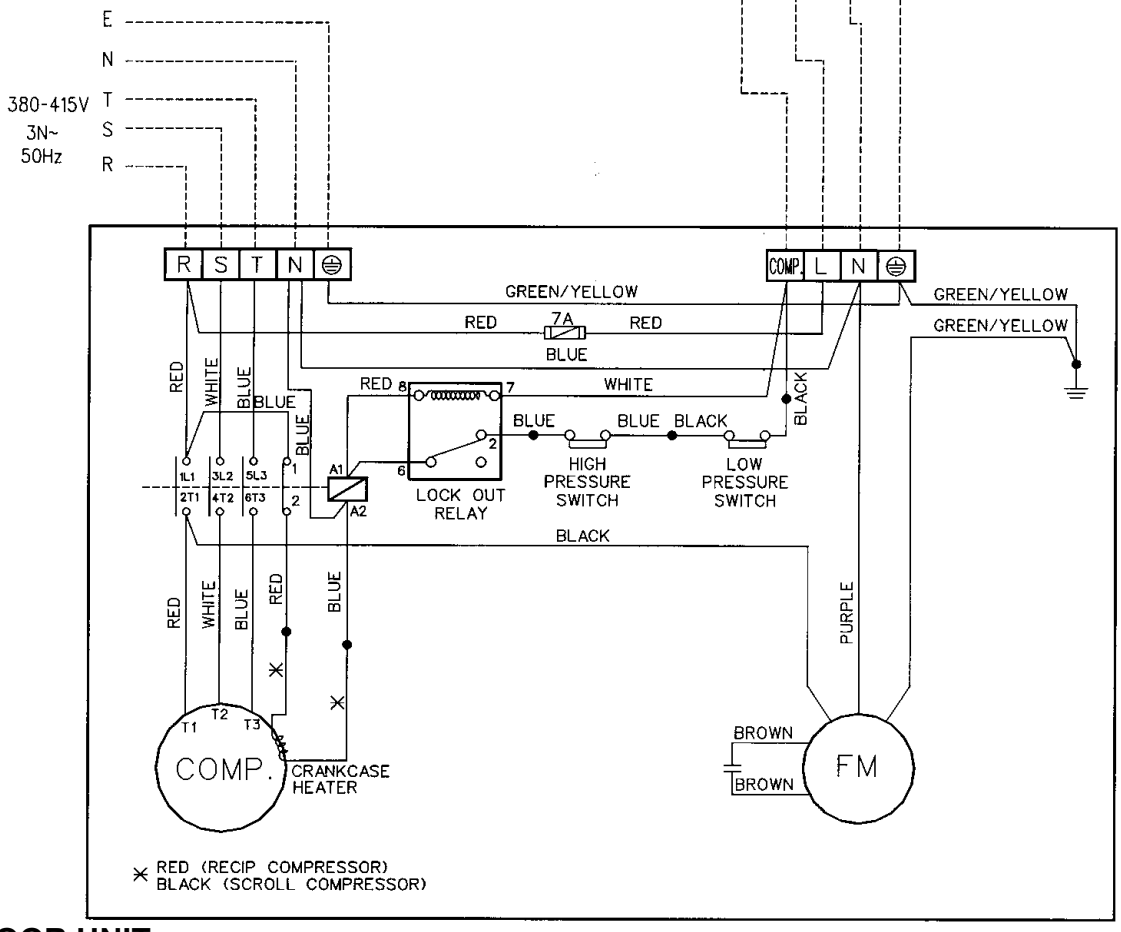



**OUTDOOR UNIT**
**MODEL : MVCU 035A**



**INDOOR UNIT**
**MODEL : MCC 040 / 050 / 060C**




**OUTDOOR UNIT**
**MODEL : MVCU 040 / 050 / 060A**

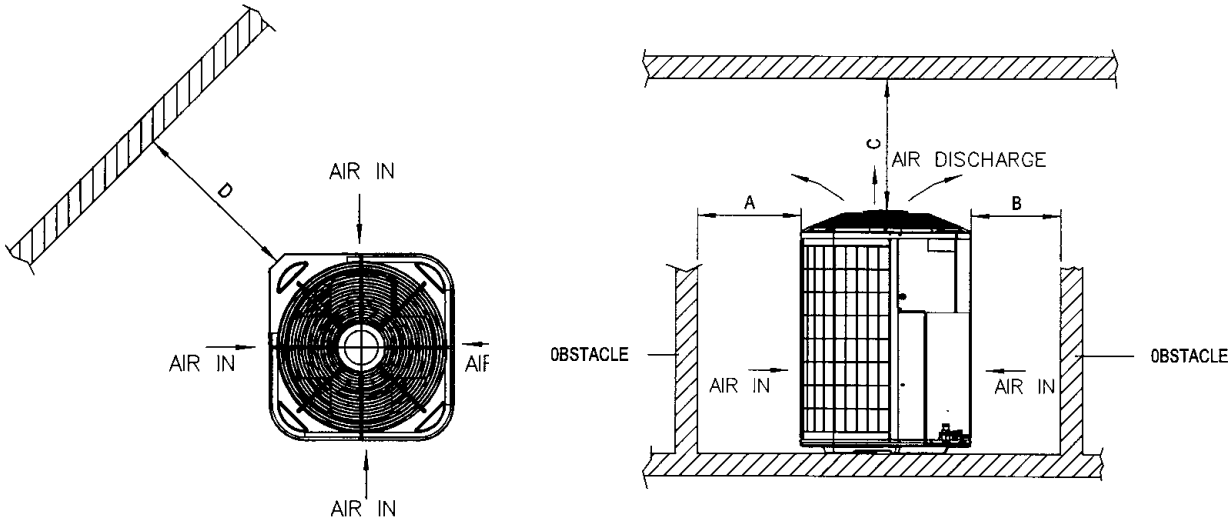
# Installation

## (1) Installation Of VCU

- The unit should be installed in accordance with all national and local codes and regulations which govern the installation of this type of equipment.
- The VCU unit must not be installed with any duct work on the air discharge side. The outdoor fan is a propeller type and is not designed to operate against any additional external static.
- The maximum & minimum operating conditions must be observed to assure the system to maximize the capacity with minimum service. Please refer to “Operating range”.

### Installation Clearance

Outdoor units should be installed such that there is no short circuit of the hot discharge air or obstruction to smooth air flow.




Please allow 610 mm clearance between units for proper air flow.

| MODEL | A | B | C | D |
|---|---|---|---|---|
| ALL VCUs | 305 mm | 305 mm | 1219 mm | 762 mm |

## (2) Refrigerant Piping

### Maximum Pipe Length And Maximum Number Of Bends

- When the pipe length becomes too long, both the capacity and reliability drop. As the number of bends increases, system piping resistance to the refrigerant flow increases, thus lowering the cooling capacity, and as the result the font compressor may become defective. Always choose the shortest path and follow the recommendation as tabulated below:

| MODEL / DATA | MVCU 025A | MVCU 030A | MVCU 035 / 040A | MVCU 050A | MVCU 060A |
|---|---|---|---|---|---|
| Max. Length, L | 15m | 35m | 35m | 35m | 35m |
| Max. Elevation, H | 8m | 15m | 15m | 15m | 20m |
| Max. No. of bends | 10 | 10 | 10 | 10 | 10 |

**Piping Sizes (Brazed Valve)**
Piping sizes are as follows:

| MODEL | MVCU 025A | MVCU 030A | MVCU 035 / 040A | MVCU 050A | MVCU 060A |
|---|---|---|---|---|---|
| Liquid (mm/in) | 9.52 (3/8) | 9.52 (3/8) | 9.52 (3/8) | 9.52 (3/8) | 12.7 (1/2) |
| Suction (mm/in) | 15.88 (5/8) | 15.88 (5/8) | 19.05 (3/4) | 19.05 (3/4) | 22.23 (7/8) |

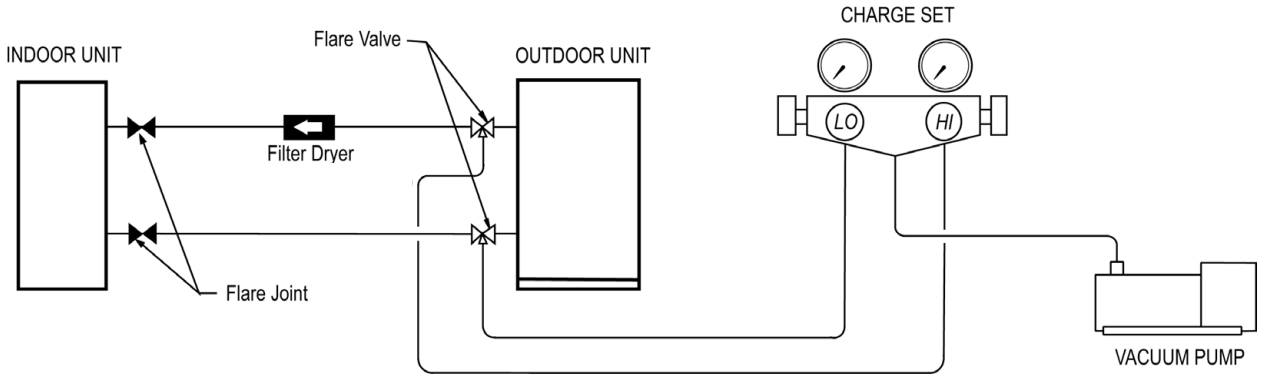
## (3) Wiring

**Electrical Connections**
- Wiring regulations on wire diameters differ from country to country. Please refer to your LOCAL ELECTRICAL CODES for field wiring rules. Be sure that installation comply with such rules and regulations.

**General Precautions**
- Ensure that the rated voltage of the unit corresponds to the name plate before carrying out proper wiring according to the wiring diagram.
- Provide a power outlet to be used exclusively for each unit. A power supply disconnect and a circuit breaker for over-current protection should be provided in the exclusive line.
- The unit must be **GROUNDED** to prevent possible hazards due to insulation failures.
- All wiring must be firmly connected.
- All wiring must not touch the hot refrigerant piping, compressor or any moving parts of fan motors.

## (4) Vacuuming And Charging

- The precharged outdoor unit does not need any vacuuming or charging. However once it is connected, the connecting pipe line and the indoor need to be vacuumed before releasing the R22 from the outdoor unit.
  1) Open the service port core cap.
  2) Connect pressure gauge to the service port.
  3) Connect the line to vacuum pump. Open the charging manifold valve and turn the pump on. Vacuum to –0.1 MPa (-760mmHg) or lower. (Evacuation time varies by the pump but averagely in 1 hour).

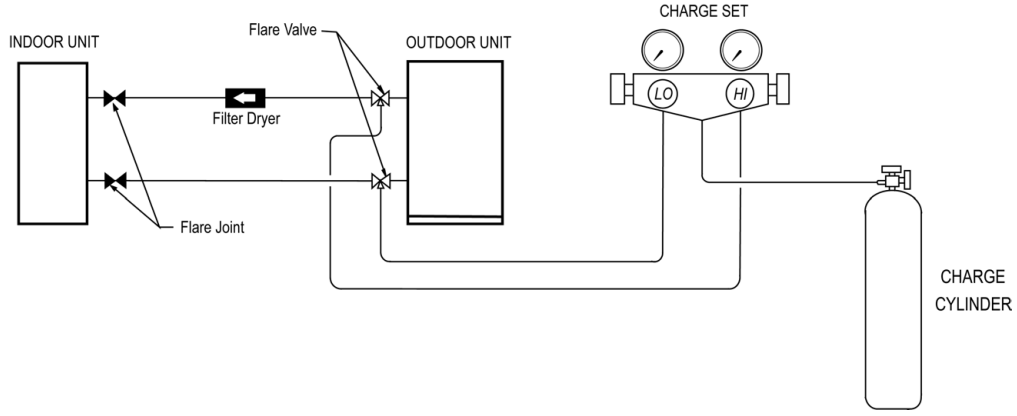


## (5) Additional Charge

- The refrigerant gas has already charged into the outdoor unit. For the piping length of 5m. Additional refrigerant charge after vacuuming is not necessary.
- When the piping length is more than 5m, please use the table below (unit in gram).

| MODEL | 7m | 10m | 15m | 20m | 35m |
|---|---|---|---|---|---|
| MVCU 025A | 76 | 190 | 380 | 570 | - |
| MVCU 030A | 100 | 250 | 500 | 750 | 1500 |
| MVCU 035 / 040A | 100 | 250 | 500 | 750 | 1500 |
| MVCU 050A | 100 | 250 | 500 | 750 | 1500 |
| MVCU 060A | 220 | 550 | 1100 | 1650 | 3300 |

Diagram shows typical charging method.




## (6) Overall Checking

- Ensure the following, in particular :
  1) The unit is mounted solidly and rigid in position.
  2) Piping and connections are leak proof after charging.
  3) Proper wiring has been done.

- Drainage check - pour some water into drain pan.
- Test run
  1) Conduct a test run after water drainage test and gas leakage test.
  2) Watch out for the following :
     a) Is the electric plug firmly inserted into the socket?
     b) Is there any abnormal sound from unit?
     c) Is there any abnormal vibration with regard to unit itself or piping?
     d) Is there smooth drainage of water?
- Check that :
  1) Outdoor fan is running, with warm air blowing off the outdoor unit (cooling cycle).
  2) Indoor blower is running and discharge cool air (cooling cycle).
  3) Suction (low side) pressure is as per recommendations.
  4) The remote controller has incorporated a 3 minutes delay in the circuit. Thus, it requires about 3 minutes before the outdoor unit can start up.

# Service And Maintenance

**Warning: Disconnect from main supply before servicing the air conditioner.**

The unit is designed to give long life operation with minimum maintenance required. However, it should be regularly checked and the following items should be given due attention.

| Components | Maintenance Procedure | Recommended Schedule |
|---|---|---|
| Air filter (Indoor Unit) | 1. Remove the ionizer filter before cleaning the filter.<br>2. Remove the dust adhering on the filter by using a vacuum cleaner or wash using water less than 40°C with a neutral cleaning detergent.<br>3. Rinse and dry it before fitting back the ionizer filter and set it back to unit.<br>**4. Note : Never use petrol, thinner, benzene or any other chemicals.** | At least once a month. |
| Indoor unit | 1. Clean away dirt or dust on grille or panel by wiping with a soft cloth soaked in lukewarm (or cool) water or neutral detergent solution.<br>**2. Note : Never use petrol, thinner, benzene or other volatile chemicals, which may cause plastic surface to deform.** | At least once a month. |
| Condense Drain Pan & Pipe | 1. Check the cleanliness and clean it if necessary.<br>2. Check the condensate water flow | Every 3 months. |
| Indoor Fan | Check if there is any abnormal noise. | If necessary |
| Indoor/Outdoor Coil | 1. Check and remove the dirt between the fins.<br>2. Check and remove any obstacles which hinder air flow through the indoor or outdoor. | Every month. |
| Power Supply | 1. Check the running current and voltage for indoor and outdoor unit.<br>2. Check the electrical wiring and tighten the wire onto the terminal block if necessary. | Every 2 months<br>Every year |
| Compressor | No maintenance needed if refrigerant circuit remains sealed. However, check for refrigerant leak at joint and fitting. | Every 6 months. |
| Compressor Oil | Oil is factory charged. Not necessary to add oil if circuit remains sealed. | No maintenance required. |
| Fan Motor Oil | All motors are pre-lubricated and sealed at factory. | No maintenance required. |

The design of the VCU outdoor series allows servicing to be carried out readily and easily. The removal of the top side, front and back panel make almost every part accessible.

Under normal circumstances, these outdoor units only require a check and cleaning of air intake coil surface once quarterly. However, if a unit is installed in areas subjected to much oil mist and dust, the coils must be regularly cleaned by qualified Air Conditioner Service Technicians to ensure sufficient heat exchange and proper operation. Otherwise, the systems life span may be shortened.

**CAUTION!**

Do not charge OXYGEN, ACETYLENE OR OTHER FLAMMABLE and poisonous gases into the unit when performing a leakage test or an airtight test. These gases could cause severe explosion and damage if exposed to high temperature and pressure.
It is recommended that only nitrogen or refrigerant be charged when performing the leakage or airtight test.

# Troubleshooting

When any air-conditioner malfunction is noted, immediately switch off the power supply to the unit, and contact the local dealer, if necessary. Some simple troubleshooting tips are given below :

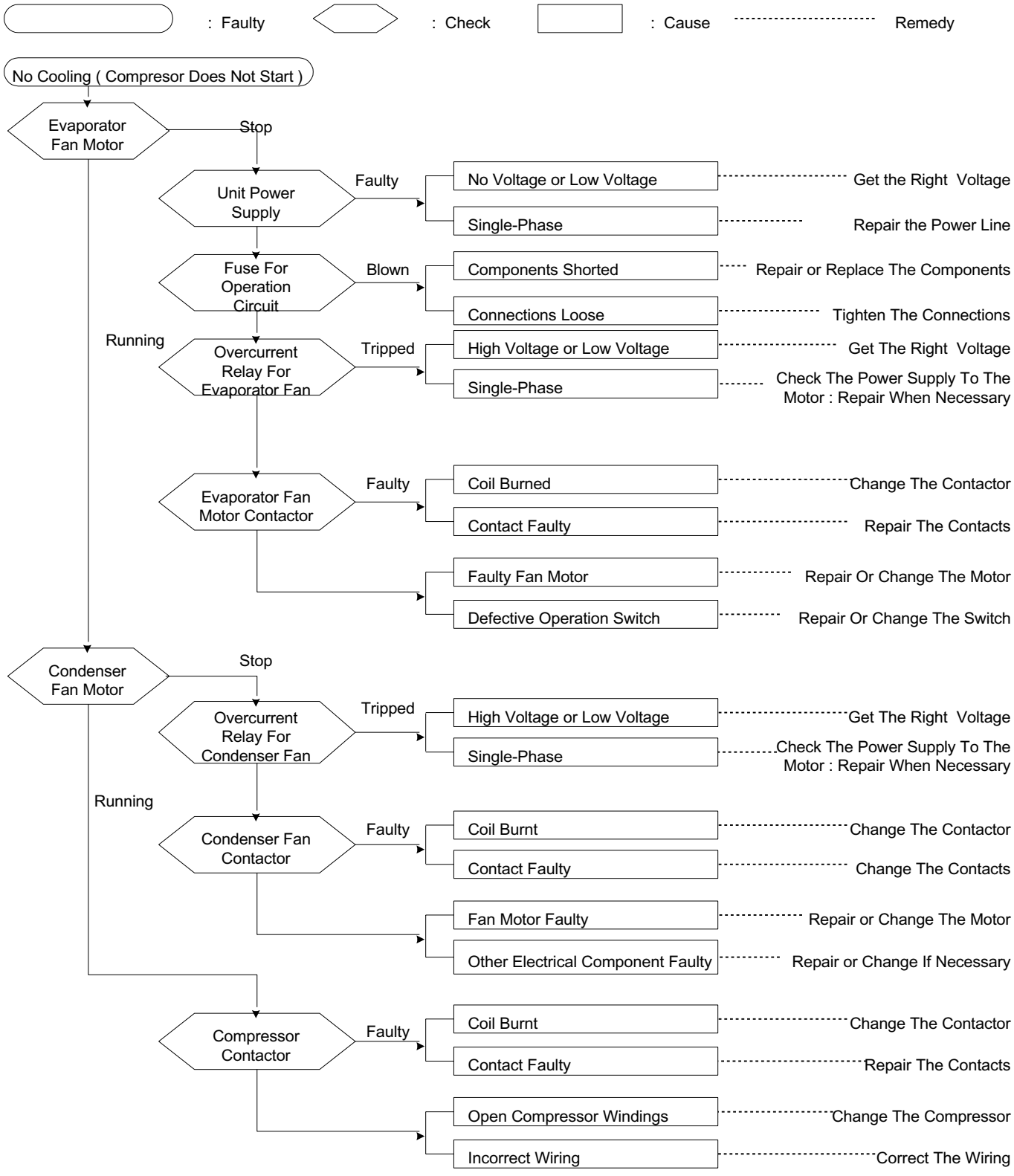
| FAULT | CAUSE |
|---|---|
| 1. Fan does not work 3 minutes after starting | • Protection against the frequent starting. Wait 3 or 4 minutes. |
| 2. The air conditioning unit does not work | • Power failure or you must be replaced the fuse.<br>• The power plug is disconnected.<br>• Possibility of making a programming error in the controller.<br>• If the fault persist after these verifications, contact your installer. |
| 3. The air conditioning unit does not blow sufficiently | • The air filter is dirty.<br>• The doors or windows are open.<br>• The air entrance and exit are clogged.<br>• The regulate temperature is not high enough. |
| 4. The remote control light is deficient | • The batteries are discharge.<br>• The batteries are not correctly inserted.<br>• The assembly is not good. |
| 5. Air discharge flow has a bad odor | • This odor can be caused by cigarette smoke particles, perfume, sweat, which stick to the coil.<br>• Check if there is any moisture on the walls, garment, other.<br>• Check the drain pan. |
| 6. Condensation on the air grille of indoor unit | • This is due to air humidity after a long time of operation.<br>• The unit has a lower temperature point, increase the point and operate at high speed. |
| 7. The water flow of air conditioning unit | • Check the condensate evacuation. |
| 8. The air conditioning unit is noisy | • “Air flow noise” : refrigerant fluid admission in evaporator. |

## FOR COOLING ONLY MODELS

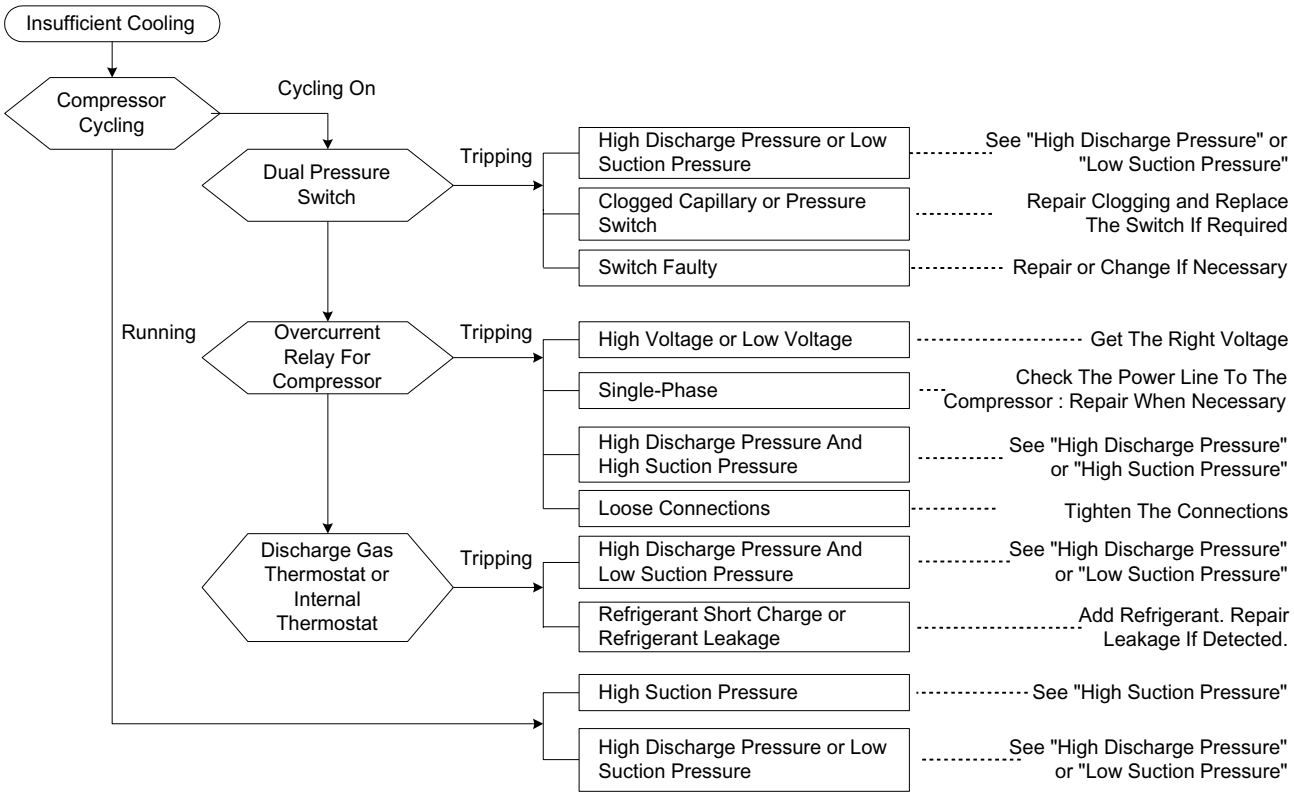
## DIAGNOSIS BY FLOW CHART

The following chart are efficient checking procedures for troubleshooting when these fan-coil units are coupled with the condensing units using standard wiring. For dual circuited models, perform the procedures for each circuit.

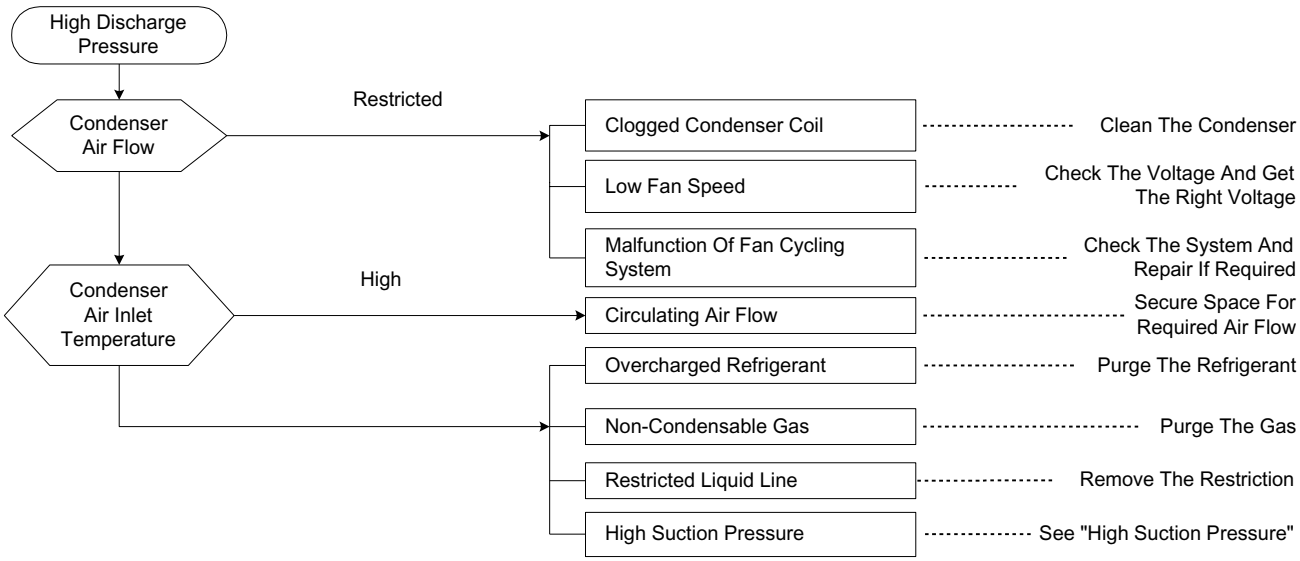
### No Cooling



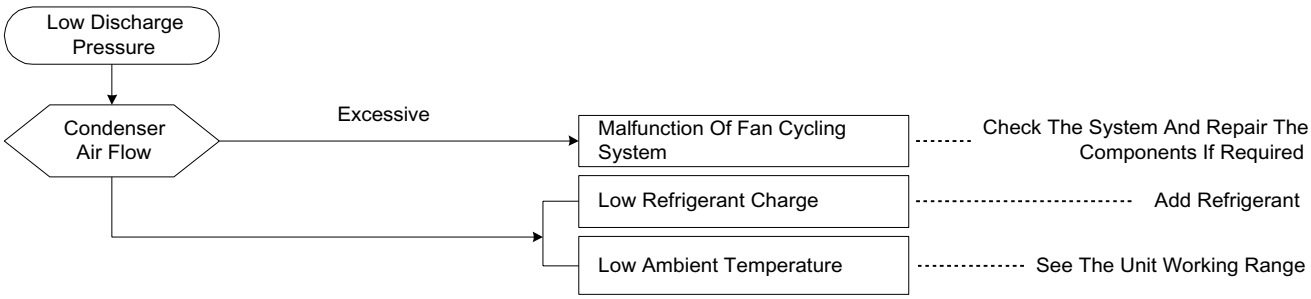
## INSUFFICIENT COOLING



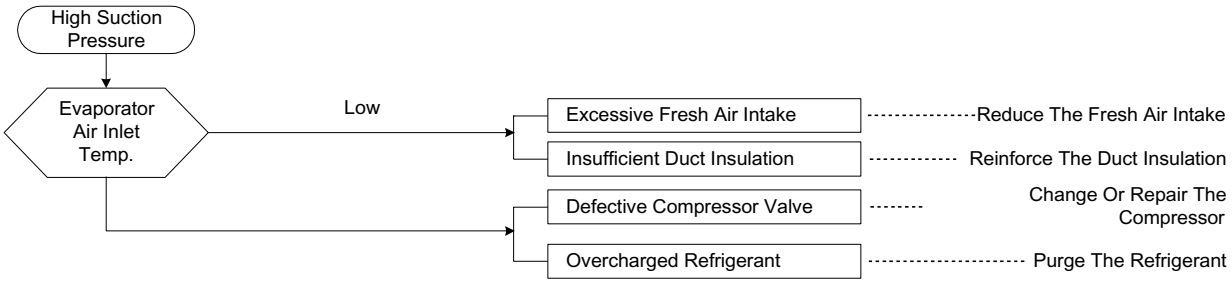

## HIGH DISCHARGE PRESSURE



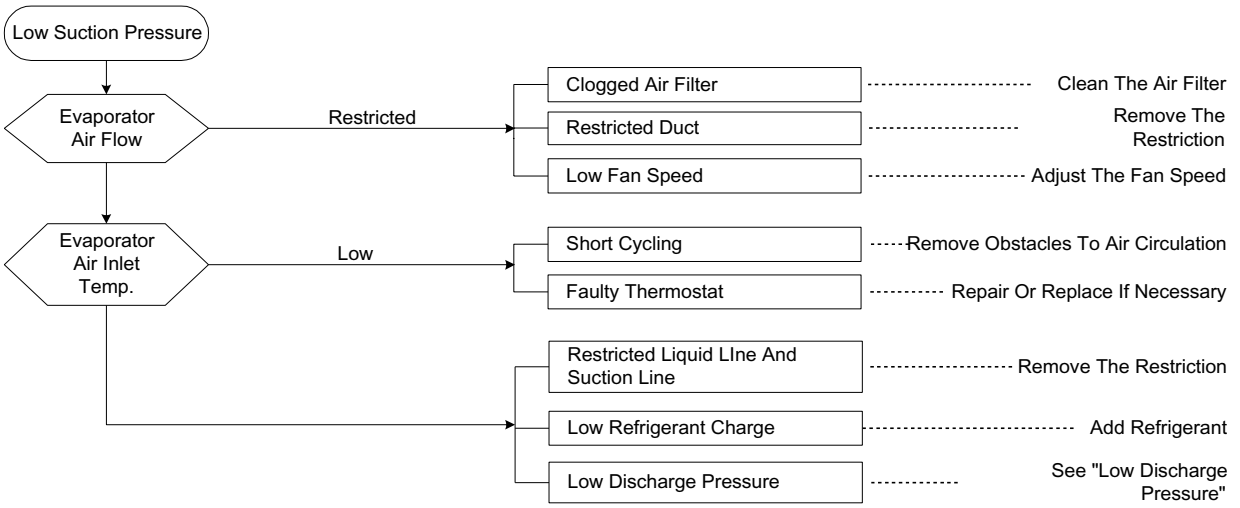

## LOW DISCHARGE PRESSURE



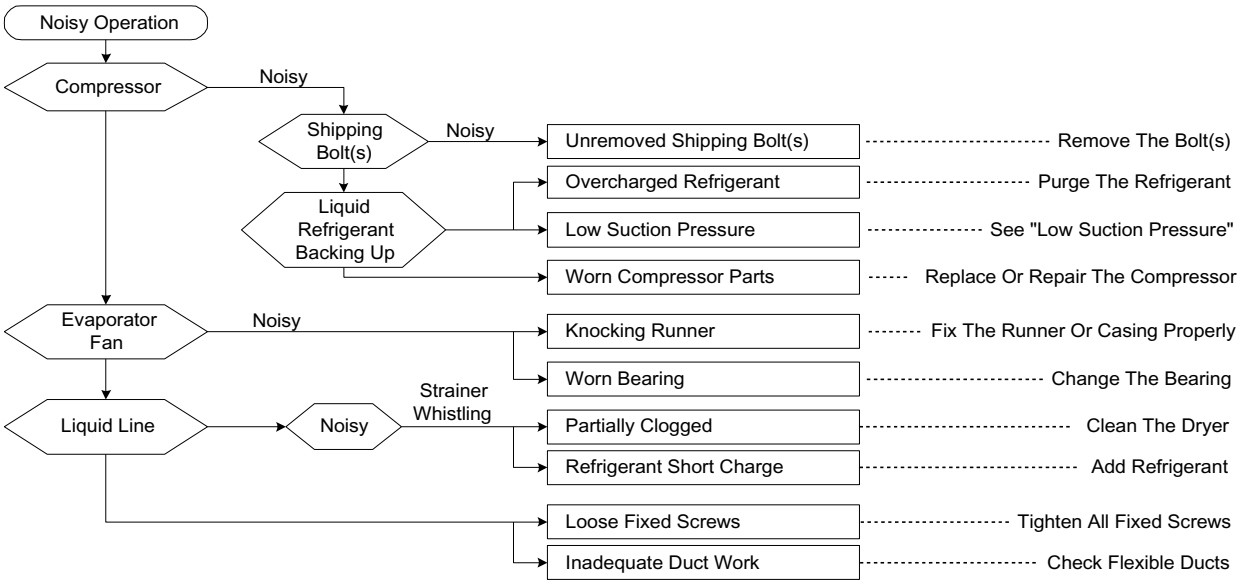
## HIGH SUCTION PRESSURE




## LOW SUCTION PRESSURE

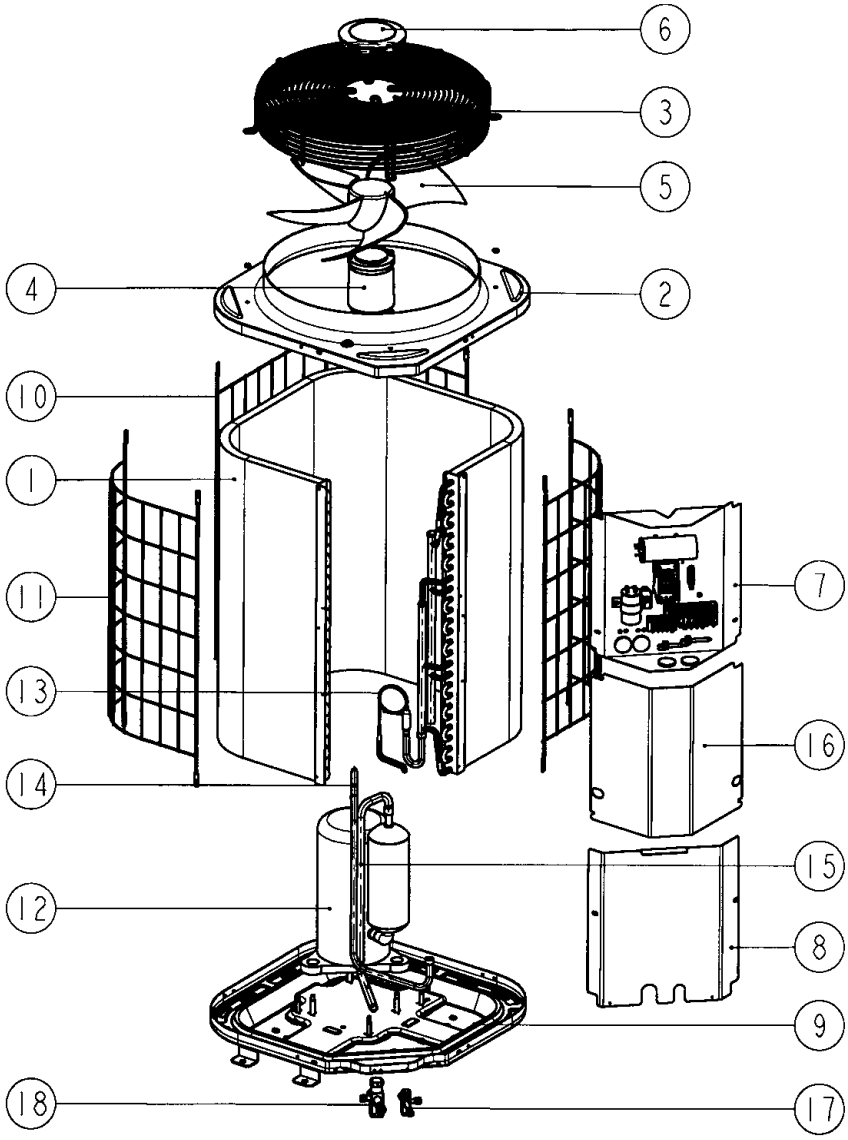



## NOISY OPERATION



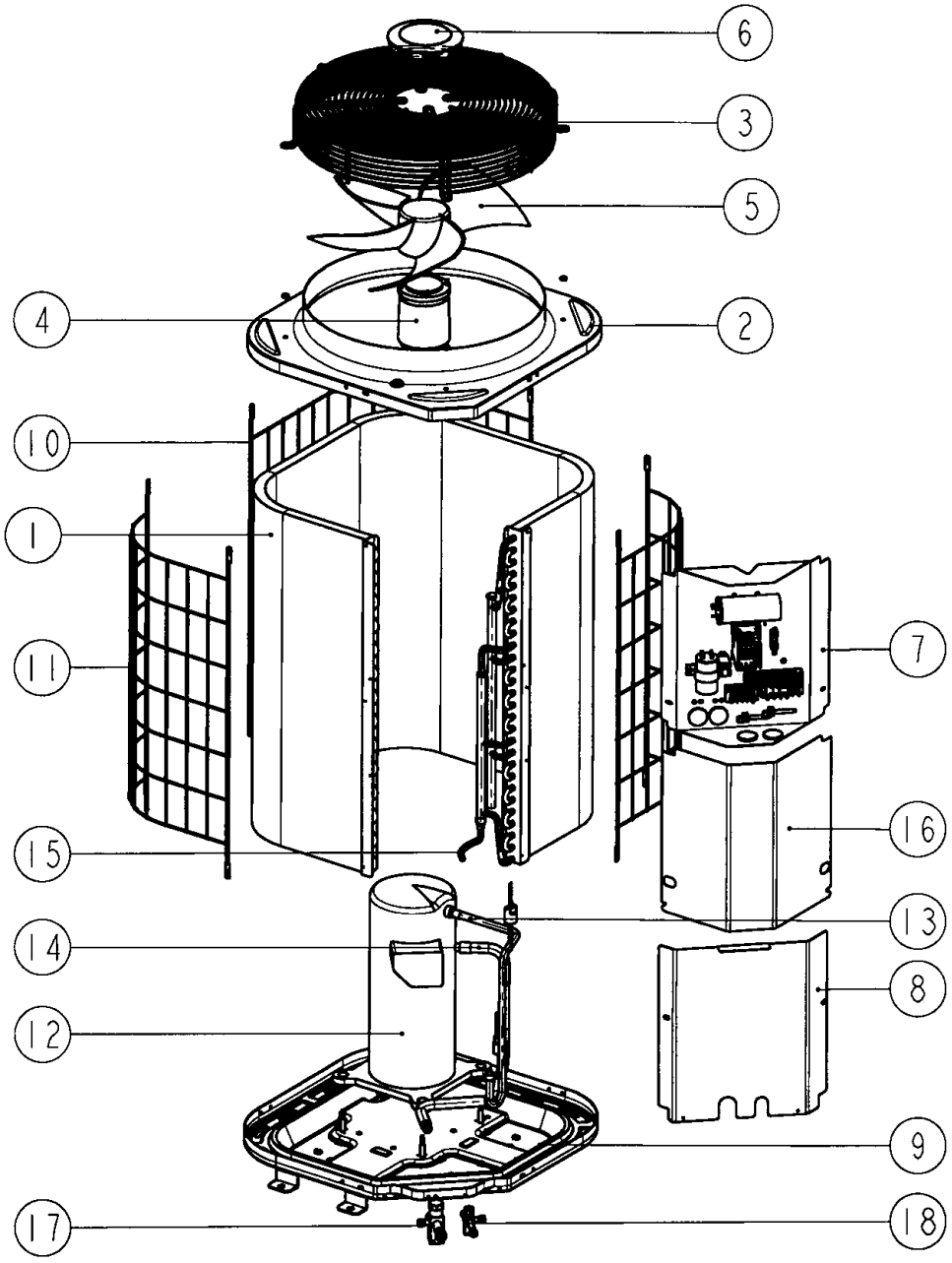
# Parts List

**MODEL : MVCU 025A**



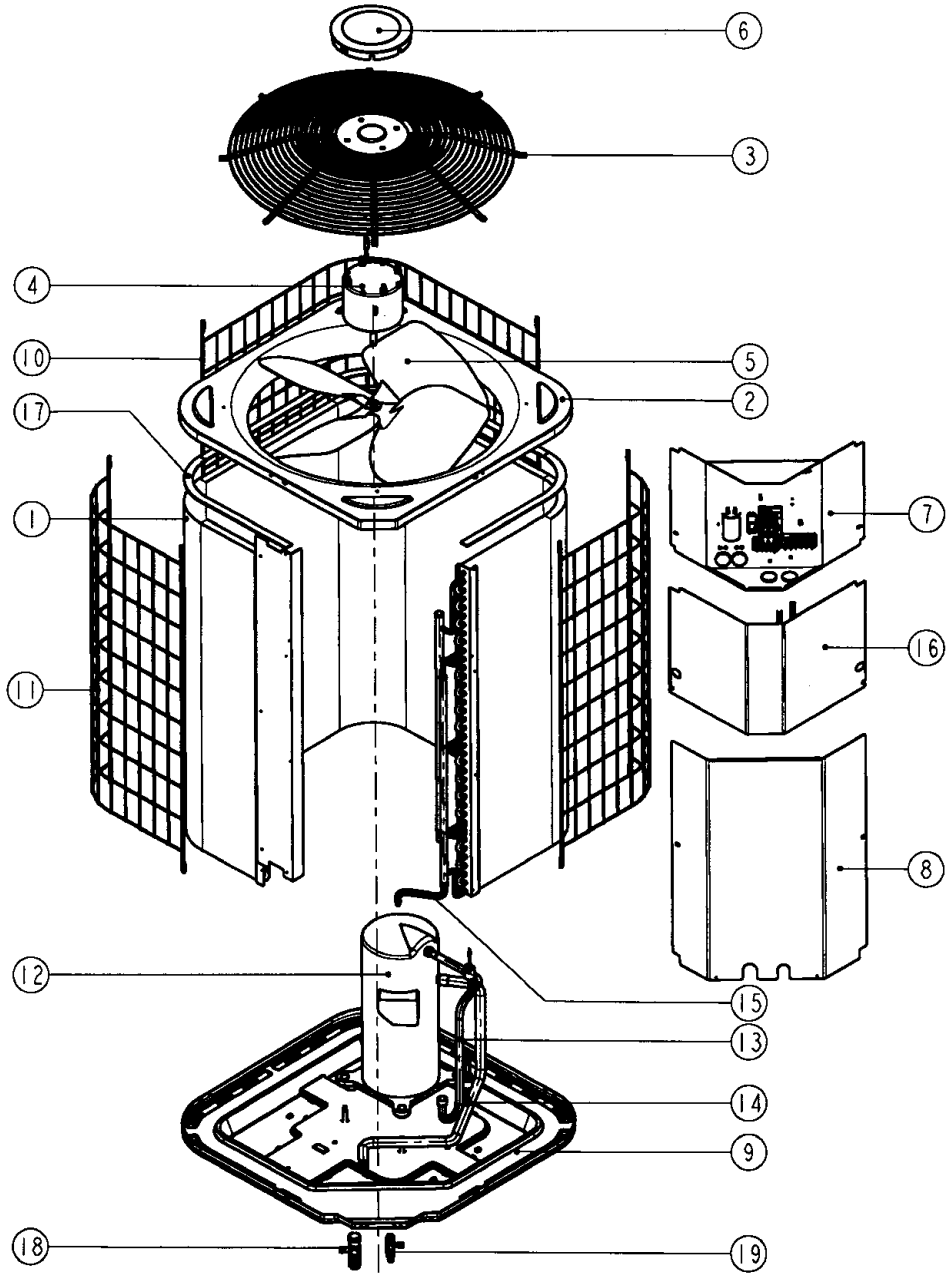

| NO | DESCRIPTION | NO | DESCRIPTION |
|---|---|---|---|
| 1 | COIL ASSY | 11 | SIDE COIL GUARD |
| 2 | TOP PANEL | 12 | COMPRESSOR |
| 3 | FAN GUARD | 13 | ASSY, TUBE HEADER TO DISCHARGE |
| 4 | FAN MOTOR | 14 | DISCHARGE TUBE ASSY |
| 5 | FAN BLADE | 15 | SUCTION TUBE ASSY |
| 6 | FAN  COVER | 16 | TERMINAL BOX COVER |
| 7 | CONTROL BOX ASSY | 17 | DISCHARGE VALVE |
| 8 | SERVICE PANEL | 18 | SUCTION VALVE |
| 9 | BASE PANEL | | |
| 10 | MIDDLE COIL GUARD | | |

**MODEL : MVCU 030 / 035A**




| NO | DESCRIPTION | NO | DESCRIPTION |
|---|---|---|---|
| 1 | COIL ASSY | 11 | SIDE COIL GUARD |
| 2 | TOP PANEL | 12 | COMPRESSOR |
| 3 | FAN GUARD | 13 | DISCHARGE TUBE ASSY |
| 4 | FAN MOTOR | 14 | SUCTION TUBE ASSY |
| 5 | FAN BLADE | 15 | ASSY, TUBE HEADER TO DISCHARGE |
| 6 | FAN COVER | 16 | TERMINAL BOX COVER |
| 7 | CONTROL BOX ASSY | 17 | SUCTION VALVE |
| 8 | SERVICE PANEL | 18 | DISCHARGE VALVE |
| 9 | BASE PANEL | | |
| 10 | MIDDLE COIL GUARD | | |

**MODEL : MVCU 040 / 050 / 060A**




| NO | DESCRIPTION | NO | DESCRIPTION |
|---|---|---|---|
| 1 | COIL ASSY | 11 | SIDE COIL GUARD |
| 2 | TOP PANEL | 12 | COMPRESSOR |
| 3 | FAN GUARD | 13 | DISCHARGE TUBE ASSY |
| 4 | FAN MOTOR | 14 | SUCTION TUBE ASSY |
| 5 | FAN BLADE | 15 | ASSY, TUBE HEADER TO DISCHARGE |
| 6 | FAN COVER | 16 | TERMINAL BOX COVER |
| 7 | CONTROL BOX ASSY | 17 | TOP COIL INSULATION |
| 8 | SERVICE PANEL | 18 | SUCTION VALVE |
| 9 | BASE PANEL | 19 | DISCHARGE VALVE |
| 10 | MIDDLE COIL GUARD | | |

McQuay International

REGISTERED ISO 9002

 +1 (800) 432-1342 www.mcquay.com